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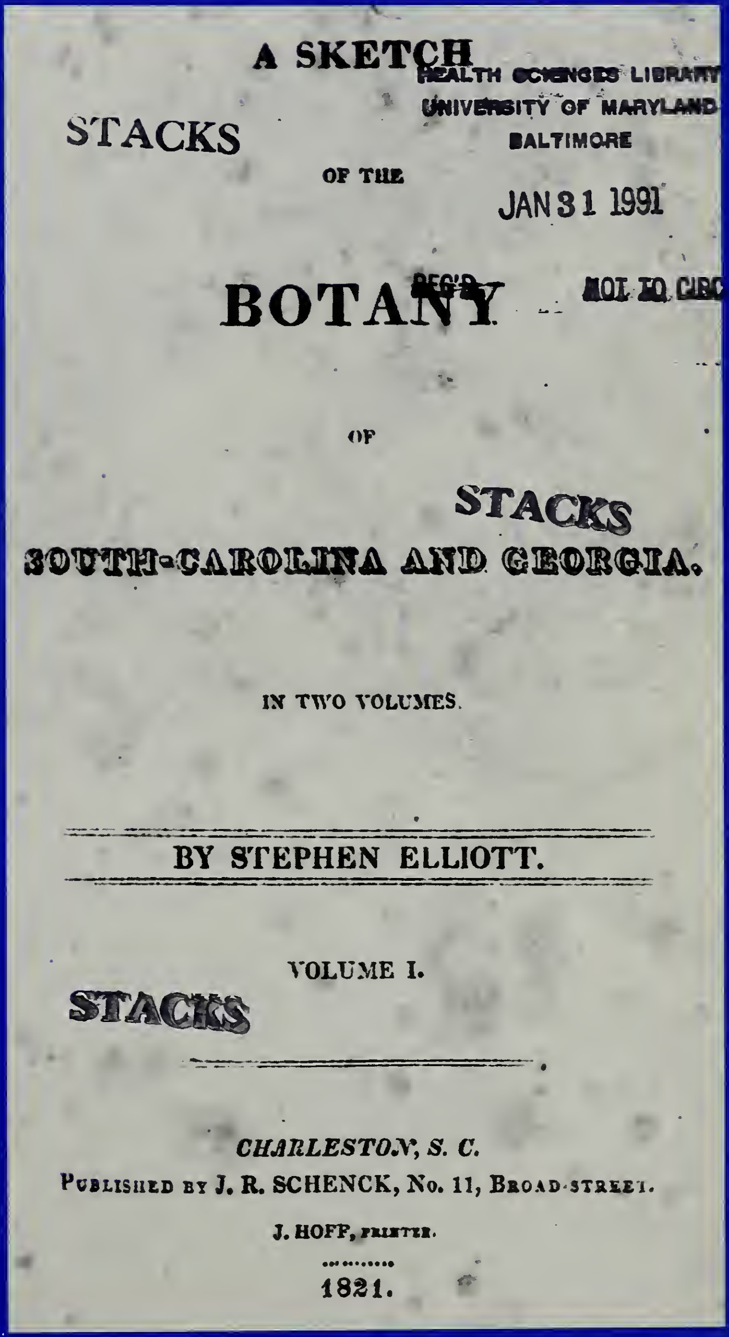

A SKETCH

OF THE

BOTANY

OF

SOUTH-CAROLINA AND GEORGIA.

IN TWO VOLUMES.

BY STEPHEN ELLIOTT.

VOLUME I.

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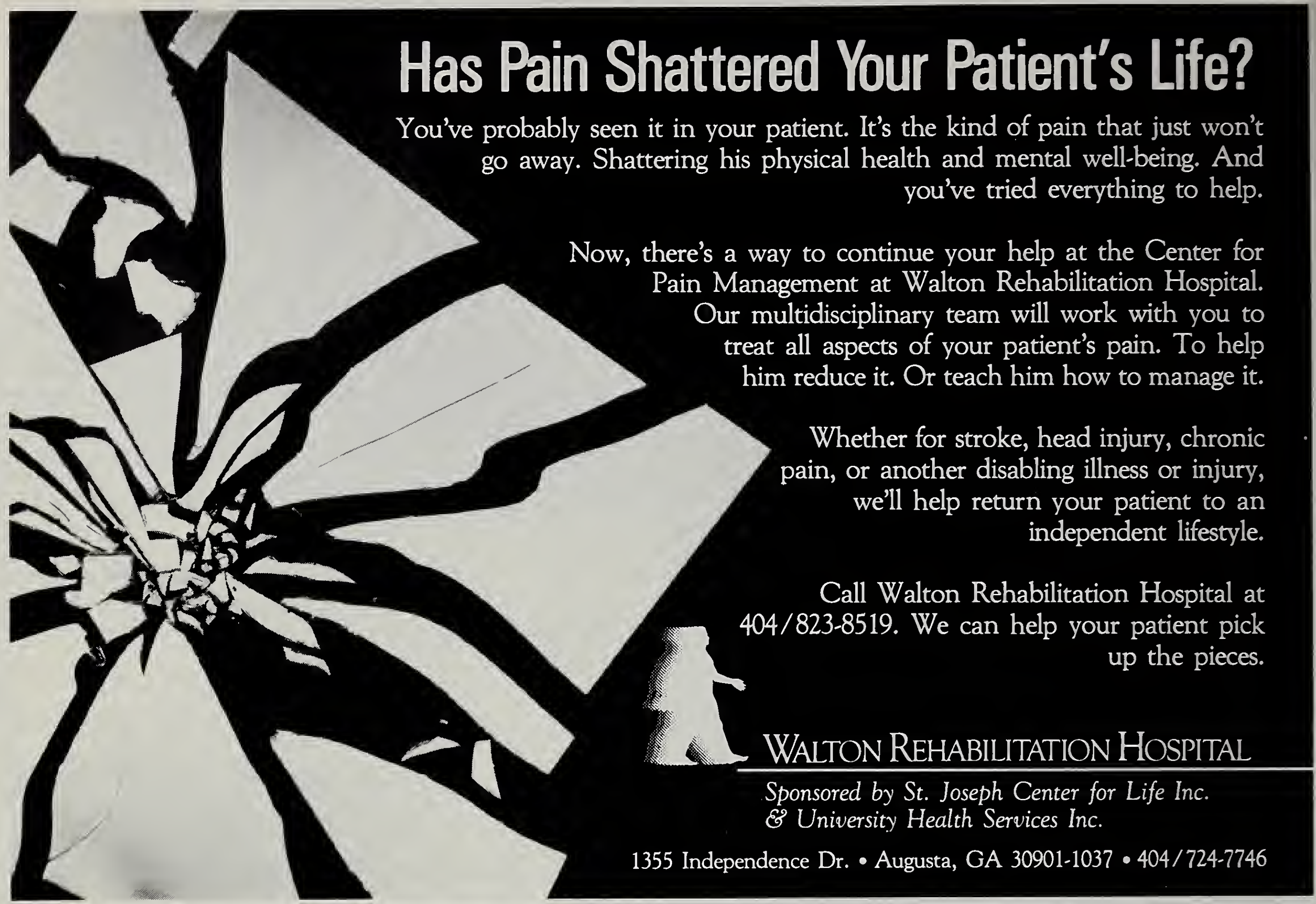

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President's Page

A NEW YEAR

This report of your president may seem to ramble. As I think of this new year and new decade there seems to be so much opportunity, so much promise and so many problems, I am unable to put it all together.

At the time of my writing, we have just finished a weekend during which American hostages in Iraq were free to come home. And yet the threat of a military action keeps a half million of our soldiers hostage to a situation orchestrated by a madman. I hope this year will see a peace in the Gulf and a permanent peace in the region.

Many communities, mine and I am sure yours, have had physicians called to active duty. At the AMA interim meeting we heard the Surgeon General of the Army describing the military buildup as it relates to doctors and nurses and health care facilities. It is a massive and amazing undertaking. Even so, there is the availability of almost any and every service you could get at home.

On another issue, we heard discussion on many reports and resolutions at the AMA interim meeting in December. Dr. John Hawk is reporting to you to summarize the activities in this issue.

The AMA meeting was John's last after 25 years. At a reception hosted by the South Carolina delegation in his honor, nearly 800 delegates and other officials came by to thank him and wish him well. He has been a giant in South Carolina medicine and in American Medical Association politics. I hope each of you will communicate to him your appreciation for his work. We will all miss him.

Finally, we must continue in our effort to get high quality, affordable health care to every person. I know the current debate and participation by multiple parties cause frustration, but the opportunity for the medical community to take a leadership role is real. I encourage your participation.

HAPPY NEW YEAR!

John W. Simmons MD

John W. Simmons, M.D.
President

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The Journal OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

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STEREOTACTIC NEUROSURGERY IN THE MANAGEMENT OF DEEP LESIONS IN THE BRAIN*

MICHAEL N. BUCCI, M.D.**
WESLEY A. CARR, M.D.

The first stereotactic apparatus for operations on the human brain was described by Spiegel et al[1] in 1947. With recent advances in neuroradiologic imaging such as computed tomography (CT) and magnetic resonance imaging (MRI), stereotactic techniques have become invaluable in the management of intracranial lesions.

The stereotactic frame has become a safe surgical tool for managing deep tumor biopsies,[2, 3] abscess drainage,[4] hematoma evacuation,[5] and craniotomities.[6-8] The recent development of the Cosman-Roberts-Wells (CRW) frame,[9] which is an arc-radius design unit, has provided the neurosurgeon with increased treatment versatility.

The authors report their initial experience with CRW stereotaxis in the management of deep intracranial lesions.

METHODS

Between August, 1989 and May, 1990, 11 patients with deep intracranial lesions underwent diagnosis and treatment at Anderson Memorial Hospital, Anderson, South Carolina. Table I lists the patient profile. The patients were initially evaluated by one of the attending neurologists (WAC) and referred for neurosurgical consultation (MNB). All patients underwent CT localization using a Picker 1200 SX Fourth generation scanner followed by CRW stereotactic localization (Figure 1). Nine patients underwent biopsy, one underwent abscess drainage (Figure 2) and one underwent craniotomy with total tumor removal. Three of the nine biopsy patients underwent subsequent craniotomy for tumor and another patient underwent coincidental placement of a Rickham reservoir into a tumor cyst.

TABLE I

PATIENT	AGE	LESION LOCATION	PROCEDURE	PATHOLOGIC DIAGNOSIS
R.W.	72	L. parietal	Biopsy	Grade IV Astrocytoma
H.T.	69	R. temporal	Biopsy/Craniotomy	Grade IV Astrocytoma
C.P.	58	Bifrontal	Biopsy	Grade IV Astrocytoma
N.C.	44	R. Thalamic	Biopsy	Grade III Astrocytoma
C.Po.	69	R. parietal	Biopsy/Rickham Reservoir Placement	Grade IV Astrocytoma
B.J.	4	R. Frontoparietal	Drainage of Abscess	Abscess
N.B.	48	Bifrontal	Biopsy/Craniotomy	Grade II Astrocytoma
H.D.	57	R. parietal	Biopsy	Metastatic Carcinoma
J.B.	41	R. frontotemporal	Biopsy	Vasculitis
J.R.	44	R. frontotemporal	Biopsy/Craniotomy	Grade II Astrocytoma
B.M.	70	R. motor strip	Craniotomy	Metastatic Carcinoma

Table I lists the pertinent patient data including age, location, procedure and diagnosis.

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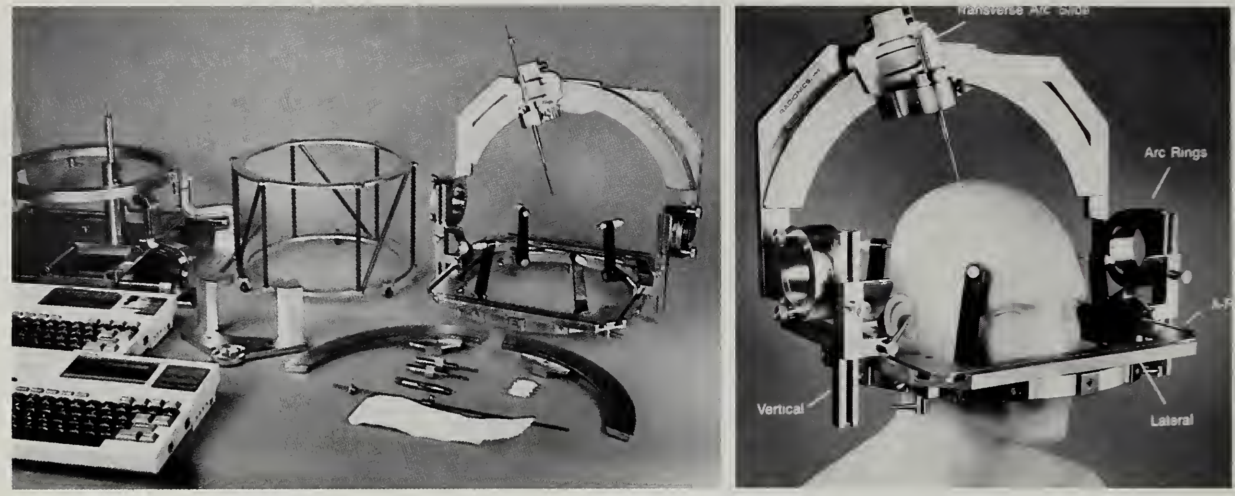

FIGURE 1 (A, B): CRW components and simulated model attachment.

The following case illustrates the usefulness of CRW stereotaxy with lesions in elegant brain regions.

CASE

B. M., a 70-year-old female, presented with a ten-day history of worsening left-sided weakness. Her past history was significant for long-term cigarette abuse. Neurologic examination revealed a left central facial palsy, marked left pronator drift, 3/5 left upper extremity and 2/5 left lower extremity weakness. She was unable to stand or walk. CT brain scanning revealed a contrast enhancing mass directly in the right motor strip, with significant edema (Figure 3A). After receiving 48 hours of intravenous dexamethasone, she underwent CRW localization and craniotomy through a small scalp flap with total resection of tumor (Figure 3B). Pathologic diagnosis revealed a metastatic adenocarcinoma. Postoperative neurologic examination at day five revealed 4+/5 left-sided strength without pronator drift and independent ambulation with a cane. Two months postoperatively she had grossly normal neurologic function despite whole brain irradiation.

RESULTS

There were no postoperative neurologic deficits related to the stereotactic procedures. Patient C. Po. had some minimal bleeding intraoperatively post-biopsy which subsequently cleared with irrigation. Postoperative CT scanning revealed no evidence of hemorrhage. Patient R. W. had a rapidly deteriorating course secondary to malignant astrocytoma and expired four weeks postoperatively despite receiving dexamethasone and postoperative radiation therapy. There were no infections and no medical complications in this group of patients. Two patients (B. J. and B. M.) had dramatic reversal of neurologic deficit following stereotactic procedures.

DISCUSSION

The development of image-directed stereotaxis has facilitated the management of deep intracranial lesions with increased safety and accuracy. Polar coordinate instruments such

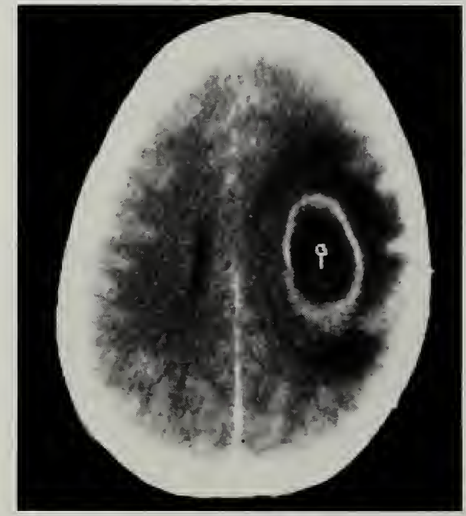

FIGURE 2: CT scan of patient B.J. showing deep, contrast enhancing right parietal lesion which proved to be an abscess.

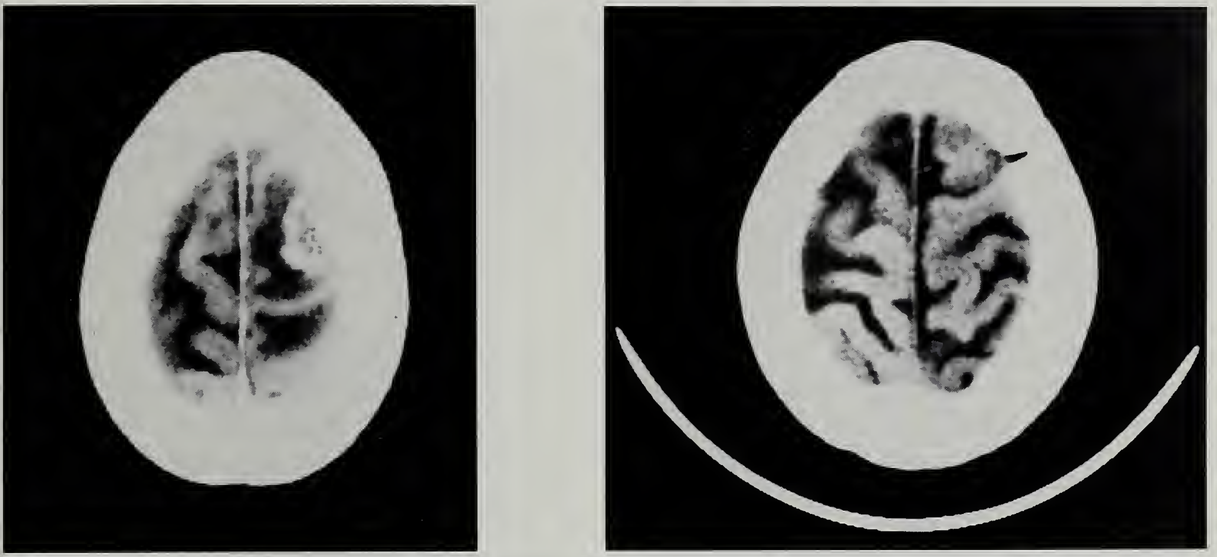

FIGURE 3 (A, B): Pre- and postoperative CT brain scans of patient B.M. showing right posterior frontal lesion in the motor strip and its complete resection.

as the Brown-Roberts-Wells (BRW) frame rely on interlocking arcs to generate target localization.[2] To obtain a trajectory, coordinate definitions must be assimilated using CT fiducial data and entry-point data. However, the CRW frame is an arc-radius design with the intracranial probe length remaining equal to the arc radius. Therefore, preselection of entry-point data is unnecessary and multiple biopsy trajectories are possible through a single entry point.[9]

The CRW unit is affixed to the skull using four-point fixation of the base ring (Figure 1). The frame then attaches to the base ring through locking ball-in-socket joints. The arc may be rotated clear of the operative field thereby allowing stereotactic craniotomy to be performed without altering lesion localization or sterility.

This initial experience with CRW stereotaxis clearly demonstrates a safe and highly versatile approach to the management of intracranial lesions. The system has proved to be durable and highly reliable. Most biopsy procedures can be performed under local anesthesia with intravenous sedation and anesthesia stand-by. Endotracheal intubation can be performed, when indicated, without significant difficulty. Biopsies are performed through a small burr hole created through a small incision. Recovery time is minimal as is length of hospital stay.

Therefore, CRW stereotactic management of deep and difficult to access intracranial lesions has been shown to be safe and reliable. This versatile unit provides the neurosurgeon with an approach to the difficult to manage intracranial lesion with low morbidity and mortality. ☐

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ADOLESCENT PREGNANCY: EFFECTS OF NUTRIENTS ON HEMATOCRIT AND BIRTH WEIGHT IN ORANGEBURG COUNTY*

ELAINE JACKSON, M.S., MT (ASCP)
KAILASH MATHUR, DVM, Ph.D.**

Teenage pregnancy is a major concern in today's society. Since adolescence is an optimum period for growth and development, the pregnant adolescent should consume adequate food to provide nutrients for her own growth as well as optimal fetal growth.[1,2] Iron deficiency anemia is a prevalent nutritional disorder and the pregnant adolescent is considered to be at increased nutritional risk to develop this type of anemia.[3]

Adequate weight gain of the mother is important for a healthy pregnancy and adequate birth weight of the infant.[4] Low birth weight infants are often seen in adolescent pregnancy, especially in southern rural areas. It has been noted that South Carolina is one state which has a significantly higher prevalence of low birth weight infants.

Inadequate diet causes a deficiency of protein, vitamin B12, folic acid, or iron. Adequate quantities that meet the Recommended Dietary Allowance of these nutrients should prevent anemia by normal development of erythrocytes to maintain a constant hematocrit.[5] This study was undertaken to establish the incidence of anemia in an area where nutritionally vulnerable individuals were expected to be prevalent. The diet assessment and analysis provide information to establish dietary patterns for this group of individuals.

METHODS

One hundred twenty-six randomly selected subjects; 98 Blacks and 28 non-Blacks participated in this study. Data from medical records at the Edisto District Health Department of Orangeburg, South Carolina were collected which included age, race, weight gain, hematocrit values at initial visit, and baby's birth weight at full term. Diet assessment was provided by a nutritionist at the health department as adequate or inadequate based on the 24-hour diet recall. The 24-hour diet recall of each participant was analyzed for intake of total kilocalories and the nutrients protein, vitamin B12, folic acid and iron by the Nutritionist III computer program.[6] All nutrients were compared with the RDA.[7]

The hematocrits were performed by the microhematocrit method of microcentrifugation by the Edisto District laboratory personnel. The Edisto District Health Department defined anemia as a hematocrit less than or equal to 34 percent. A weight of less than or equal to 5.5 pounds was considered as a low birth weight for an infant. The data were analyzed in the SPSSx Batch System computer program.

RESULTS

The subjects in this study were pregnant adolescents, 13-19 years of age, who visited Edisto District Health Department for prenatal care and also participated in the WIC program. Table 1 shows the distribution of Blacks and non-Blacks by age. The mean age of subjects in this study was 17 years. There were 78% Blacks and 22% non-Blacks. Table 2 represents the mean values for infant birth weight; mother's hematocrit, weight gain, and intake of nutrients for Blacks and non-Blacks. The mean values for hematocrit and birth weight were higher for non-Blacks as compared to Blacks. The average weight gain for Blacks was 23±11.7 as compared to 27±11.8 for non-Blacks. Hematocrit values ranged from 28 to 41 percent for Blacks and non-Blacks and hematocrits less than or equal to

---

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30 percent were found in 15 percent of Blacks and one percent of non-Blacks as shown in Table 3. Thirteen percent of total subjects had hematocrit values within the range of 28-30. A hematocrit value of 34 percent or below was found in 71 percent of Blacks and 54 percent of total subjects had hematocrit values less than or equal to 34 percent.

TABLE 1
Age Distribution for Blacks and Non-Blacks

	Black	*Non-Black*	*Both Races*	
Age	*No.*	*No.*	*No.*	*% of Total Persons*
13	1	1	2	1
14	7	2	9	7
15	10	3	13	10
16	23	6	29	23
17	17	4	21	17
18	26	9	35	28
19	14	3	17	14
Total No. of Persons	98	28	126	
% of Total Persons	78	22		100

Note: The mean age of total subjects was 17 years.

Table 2 shows inadequate diet assessments for 76 percent of Blacks and 79 percent of non-Blacks. Table 2 presents data on the mean values for kilocalories, protein, vitamin B12, folic acid and iron intake per day. The average intake of kilocalories for Blacks was 2102±937 as compared to 1852±721 for non-Blacks. Kilocalories ranged from 641 to 5567 for Blacks and 658 to 3497 for non-Blacks.

The average intake for protein for Blacks was 73±38 as compared to 74±33 for non-Blacks. Protein intake ranged from 16 to 270 grams for Blacks and 17 to 147 grams for non-Blacks.

The average intake of Vitamin B12 for Blacks was 4.5±4.4 as compared to 4.3±6.0 for non-Blacks. Vitamin B12 intake ranged from .1 to 33 ug for Blacks and .4 to 32 ug for non-Blacks.

The average intake of folic acid for Blacks was 240±226 as compared to 241±335 for non-Blacks. Intake of folic acid ranged from 45 to 1315 ug for Blacks and 77 to 1845 ug for non-Blacks.

TABLE 2
Mean Values for Variables for Blacks and Non-Blacks

	Mean	
Variable	*Blacks*	*Non-Blacks*
Weight Gain	23±11.7 lb.	27±11.8 lb.
Birth Weight	6.8±1.1 lb.	7.5±1.1 lb.
Hematocrit	33.4±2.57%	34.5±2.77%
Kilo Calories	2102±937 KC	1852±721 KC
Protein Intake	73±37.6 g	74±32.8 g
Vitamin B12 Intake	4.5±4.4 ug	4.3±6.0 ug
Folic Acid Intake	240±226 ug	241±335 ug
Iron Intake	13±8 mg	14±14 mg

Note: 76 percent of Blacks and 79 percent of non-Blacks had inadequate diet assessments.

The average intake of iron for Blacks was 13±8 as compared to 14±14 for non-Blacks. Iron ranged from 3 to 51 mg for Blacks and 4 to 78 mg for non-Blacks. Serumiron binding capacity data were not available.

Multiple regression was performed with hematocrit as the dependent variable and nutrient intake of protein, vitamin B12, folic acid, and iron as independent variables. Only protein was found to have a positive effect on hematocrit.

TABLE 3
Comparison of Hematocrit Values for Blacks and Non-Blacks

	Black	*Non-Black*	*Both Races*	
Hematocrit Range	*No. of Persons*	*No. of Persons*	*No. of Persons*	*% of Total Persons*
28-30	15	1	16	13
31-34	55	14	69	55
35-38	24	10	34	27
39-41	4	3	7	5
Total No. of Persons	98	28	126	
% of Total Persons	78	22		100

Multiple regression was performed with baby's birth weight as the dependent variable and weight gained by the mother, hematocrit, total kilocalories and dietary variables: protein, vitamin B12, folic acid and iron as independent variables. There was a significance in weight gain of mother on baby's birth weight. Nutrient intake did not affect the birth weight. The mean birth weight for Blacks was 6.8±1 as compared to 7.5±1 for non-Blacks as presented in Table 2. Birth weight ranged from 1.3 to 8.9 pounds for Blacks and 5.4 to 9.9 for non-Blacks.

Table 4 represents significant combined results of total subjects. RDA values below 2400 Kilocalories were found in 71 percent of total subjects; below 76 grams of protein were found in 61 percent; below 4 ug of vitamin B12 in 57 percent, below 800 ug of folic acid in 97 percent; below 48 mg of iron in 98 percent. Sixty-seven percent had hematocrit of 34 percent or less, 61 percent gained less than 25 pounds during pregnancy, and nine percent had babies which weighed less than 5.5 pounds.

DISCUSSION

The results of this study showed that a significant number, 71 percent of Black subjects and 54 percent of non-Black subjects, had a hematocrit level of 34 percent or less. The hematocrit level is used to determine the incidence of iron deficiency anemia. These results indicated that many adolescents began their pregnancy with low hematocrit levels.

TABLE 4
Results of Total Subjects

Variable	*% Total Subjects*
Hematocrit ≤ 34%	68
Weight Gained < 25 lb.	61
Birth Weight ≤ 5.5	9
Inadequate Diet	76
Nutrient Intake:	
< Kilocalories	71
< 76 g Protein	61
< 4 ug Vitamin B12	57
< 800 ug Folic Acid	97
< 48 mg Iron	98

The mean hematocrit for Black subjects was 33.4; the mean hematocrit for non-Black subjects was 34.5. The results of this study indicated a hematocrit of 1.1 percent lower for Blacks than non-Blacks, which agrees with the findings of other researchers.[8-11] Both Blacks and non-Blacks in this study were considered to be at risk for nutritional anemia. The national mean hematocrit for 13 to 19-year-old females is 39 to 39.5 percent.[12] The mean dietary intake for protein, vitamin B12, folic acid and iron did not differ significantly between the two groups. These findings support the probability that genetic and environmental factors are responsible for the difference in the hematocrit levels between Blacks and non-Blacks.[9, 11]

The 24-hour dietary intake was assessed by the Edisto District Health Department Nutritionists which revealed 76 percent of Blacks and 79 percent of non-Blacks consumed an inadequate diet, particularly in iron and folic acid. An inadequate diet in folic acid and iron could cause anemia. It is possible that a deficiency of folic acid and iron intake could also cause lower birth weight due to megaloblastic anemia and therefore increase mortality rates.[14] It can be concluded that iron deficiency anemia does exist in this adolescent segment of the population. The Black adolescent group, with inadequate care, has the highest mortality rates over all other groups in the nation.[15]

Statistical analysis revealed that protein intake had a positive effect on the hematocrit ($p<.049$) and weight gain had a positive effect on birth weight ($p<.0017$). Analysis of variance indicated that race did have a significant effect on birth weight ($p<.0063$) in this study.

The WIC program provides nutrition education for pregnant women, infants, and children. Our goal of the WIC program is to decrease the incidence of anemia.[3] Participation in the WIC program appears to have a positive effect on pregnancy outcomes by an increase in birth weight.[16] Education programs could be designed to meet nutritional needs of similar groups of people. Dietary counseling and education about choices of food to improve the overall quality of the diet could be a constructive route toward improvement of eating habits for pregnant adolescents. (Note—More detailed analysis can be obtained from authors.)

SUMMARY

Effect of nutrients on hematocrit and birth weight during teenage pregnancy was studied for both Blacks and non-Blacks in Orangeburg County. The results of this study indicated that both Blacks and non-Blacks were considered to be at risk for nutritional anemia, based on hematocrit values. It further showed that Blacks and non-Blacks consumed an inadequate diet, particularly in iron and folic acid. ☐

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THE ADULT HEALTH CARE CONSENT ACT: NEW LEGISLATION GOVERNING TREATMENT OF INCOMPETENT PATIENTS IN SOUTH CAROLINA

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THE PROBLEM OF INFORMED CONSENT AND INCOMPETENCE

A basic ethical tenet of the patient-physician relationship is that of informed consent. It is morally wrong to infringe a patient's right of autonomy by subjecting him to treatment or diagnostic procedures without his consent. In addition to this ethical premise, the informed consent doctrine has legal significance in the law of torts. A physician can be held liable for battery for rendering treatment without informed consent.

An ethical and legal dilemma is created when a patient needing medical procedures is incompetent and thereby unable to give informed consent. This dilemma has traditionally been resolved by resort to a variety of exceptions to the consent requirement which have evolved to receive ethical and/or legal recognition.[1] These exceptions are well known and frequently used. In an emergency, an incompetent patient is treated without his consent based on the reasoning that consent is implied under the circumstances. Patients, while competent, may execute living wills[2] or durable powers-of-attorney,[3, 4] in which they express their consent to or refusal of certain types of medical care prior to an illness or injury. Informed consent is obtained from family members who act as surrogates for the patient because they are thought to be best able to express the patient's preferences. Persons judicially declared incompetent have a designated guardian who may have specific court authorization to consent to medical care on behalf of the patient.

The existence of these exceptions has by no means insured easy resolution of all situations of patient incompetence. The exceptions are fraught with uncertainty. What constitutes an emergency? What can be done for an incompetent patient who has no family in a non-emergency situation? What should be done if family members disagree? These are merely selected examples of the numerous questions which can and do arise in the course of caring for incompetent patients.

BACKGROUND ON ENACTMENT OF INFORMED CONSENT LEGISLATION

The process of dealing with some of these issues has entered a new phase in South Carolina. On May 14, 1990, the Adult Health Care Consent Act (hereinafter referred to as "the Act")[5] became effective. This legislation has established formal rules and procedures for obtaining substituted consent or dealing with emergency situations, and these rules and procedures may vary significantly from past and present practices.

Impetus for creation of this legislation came from the South Carolina Commission on Aging's Advisory Committee for Legal Advocacy for the Elderly. The Commission reported that persistent problems were being encountered in obtaining treatment consent for indigent elderly patients. In addition, the committee related an incident where an elderly incompetent patient broke her hip but had no available family to consent to treatment. Her physician refused to operate without her consent until her condition became life-threatening. Five days passed without treatment.

Concerns of the Commission on this subject were addressed to the Hospital and Health Law Committee of the South Carolina Bar which agreed to study the problem. A survey of hospitals, emergency rooms and nursing homes was conducted which revealed significant differences in policies related to obtaining consent from family members of incompetent patients.[6] Of particular interest was the response of the institutions to the problem of the elderly incompetent patient with the broken hip who had no available family. Seventy-four percent of the institutions stated they would provide treatment immediately because it was an emergency; 13% stated they would provide treatment even though it was not an emergency; and 13% stated they would not provide immediate treatment.

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Following completion of the survey, the Hospital and Health Law Committee drafted proposed legislation which was introduced in the General Assembly and evolved through the legislative process into the Adult Health Care Consent Act. In addition to the Commission on Aging, input was sought and received throughout the process from numerous associations and state agencies including the South Carolina Medical Association, the South Carolina Nurses Association, the South Carolina Department of Mental Health and many other groups too numerous to list.

PROVISIONS OF THE ADULT HEALTH CARE CONSENT ACT

In addition to giving specific guidance concerning recurring problems relating to the care of incompetents, such as the broken hip situation, the Act sets forth specific documentation requirements which, in many instances, may be different from traditional practices. Consequently, it is essential that physicians who care for incompetent patients become familiar with the new Act and modify their practices as needed to insure compliance with the law. It is not sufficient to simply present a consent form to a family member of a patient deemed to be incompetent and jot a brief note in the chart. The creation of appropriate forms which essentially force compliance with the Act's technical requirements may assist physicians in promoting compliance. Examples of the types of forms which might be used are shown in Figures 1 and 2 and reference will be made to appropriate portions of these forms to illustrate particular provisions of the Act.

As an overview, the Act generally accomplishes the following: (1) refines the distinction between incompetence adjudicated by the courts and incompetence observed by physicians; (2) sets forth guidelines for physicians to follow when patients are considered incompetent to give consent; (3) specifies priorities among family members who may be called upon to give substituted consent; (4) addresses the issue of temporary incompetence; (5) recognizes a new exception to the informed consent doctrine when no family members are available to act as surrogates; (6) gives specific legal sanction to the emergency exception to the informed consent doctrine; (7) provides for rejection of surrogate decisions which contradict known religious beliefs or specific pre-incompetence instructions of the patient; (8) confers protection to health care professionals from civil and criminal liability for certain decisions made in good faith.

Adjudicated Incompetence Contrasted with Physician Observed Incompetence

Terms which have specific legal meaning are "incapacity" and "inability to consent." Incapacity is adjudicated by the probate court when a petition seeks to have a guardian appointed to care for an individual. Physicians frequently give expert testimony concerning such individual's mental and physical condition, but the judge actually decides the issue of incapacity. This term is defined in the S.C. Code as follows:

> "Incapacitated person" means any person who is impaired by reason of mental illness, mental deficiency, physical illness or disability, advanced age, chronic use of drugs, chronic intoxication, or other cause (except minority) to the extent that he lacks sufficient understanding or capacity to make or communicate responsible decisions concerning his person or property.[7]

"Inability to consent" is determined by the physician (or in some cases non-physician health care professionals) under the new Act using the following definition:

> "Unable to consent" means unable to appreciate the nature and implications of the patient's condition and proposed health care, to make a reasoned decision

> concerning the proposed health care, or to communicate that decision in an unambiguous manner.[8]

Although the language differs, the substance of these two definitions does not differ significantly. The language of the latter definition is incorporated in the sample forms in Section I dealing with certification of inability to consent (Figures 1 and 2). (For convenience and ease of understanding, the general term "incompetence" will occasionally be used but it shall mean the same as "inability to consent.")

Certification of Inability to Consent

Substituted consent from family members may not be used without a certification that the patient is unable to consent. In non-emergency situations, this certification must be signed by two physicians each of whom must examine the patient and conclude that he/she is unable to consent according to the above definition. There is no requirement that the certification be made by physicians uninvolved in the patient's care.

The Act requires that the physician's certificate address certain particular aspects of the patient's incompetence. Specifically, the certification must contain the physician's opinion concerning: (1) the "cause" of the inability to consent, (2) the "nature" of the inability to consent, (3) the "extent" of the inability to consent, and (4) the "probable duration" of the inability to consent. While the Act provides good faith defenses to physicians regarding many aspects of the process of obtaining substituted consent, it does not set forth such a defense with regard to the certification of incompetence. Consequently, particular care should be used in preparing the certification, and a description of the patient's incompetence which addresses all of the above four characteristics is certainly advisable.

Although a two-physician certificate of incompetence may be different from most traditional practices, this requirement is consistent with formal adjudications by the courts. In order for the probate court to find incapacity, two "examiners," one of whom is a physician, must examine the patient and report their conclusions to the court.[7] Similar requirements exist as a prerequisite to a finding of mental illness as part of a commitment proceeding.[9]

Surrogate Priorities

The Act's creation of surrogate priorities may prove to be of significant benefit in dealing with situations where family members of an incompetent patient disagree on appropriate medical care. The decision of the family member with the highest priority is the only one which is to be given effect. Of course, the possibility remains of conflict between family members of the same priority level, but the Act points out that the probate court is available to resolve any such conflicts.

The order of priority set by the Act is as follows:

(1) Court-appointed guardians
(2) Holders of a durable power-of-attorney
(3) The patient's spouse
(4) A parent or adult child
(5) An adult sibling, grandparent, or adult grandchild
(6) Any other relative by blood or marriage who is reasonably believed by the health care professional to have a close personal relationship with the patient.

The first step in selecting an individual to act as surrogate is to apply the above priority list. This approach is reflected in section II of the sample forms. However, the mere existence of a person normally entitled to priority does not mandate his/her selection if an exemption applies. Three general exemptions apply to all potential surrogates: (1) the surrogate is not "reasonably available," (2) the surrogate is not willing to serve as the patient's representative, and (3) the surrogate is likewise unable to consent under the statutory definition. Other circumstances which apply to particular classes of potential surrogates must also be considered in the selection process.

Guardians and Attorneys-in-Fact

Even if a patient has a guardian or an attorney-in-fact, the representative may not serve as surrogate if his/her authority does not cover the contemplated health care decision. The existence of authority should be determined by examining appropriate documentation. Guardians are appointed by the probate court and are given a "Certificate" to evidence their appointment. This Certificate should only be accepted if it is signed by a probate court official and has the raised seal of the probate court. The guardian is entitled to make the proposed health care decision for the patient unless the Certificate sets forth specific restrictions inconsistent with such decision.

Attorneys-in-fact are created in legal documents as agents appointed by competent adults (called the "principal"). Through such agency relationship, attorneys-in-fact can speak and act in place of such principal in dealing with his/her property and financial affairs. Attorneys-in-fact are persons who hold either a power of attorney or a durable power of attorney.

Some powers-of-attorney may also cover health care decisions of an incompetent principal. To be effective, the power-of-attorney must contain language indicating that the attorney-in-fact has authority to act despite, or as a result of, the physical disability or mental incompetence of the principal.[3] The presence of such language makes the document a "durable" power-of-attorney.

Contrary to the guardian, who has authority to act unless the Certificate restricts his authority, the attorney-in-fact has no authority to act unless such authority is granted in the durable power-of-attorney. The medical professional examining the power-of-attorney must, therefore, look for four things: (1) the signature of the patient as principal, (2) language naming the potential surrogate as attorney-in-fact, (3) language making the power of attorney "durable," and (4) language granting the attorney-in-fact authority to make the proposed health care decision.

Spouse

A spouse's authorization is negated if the patient and spouse are separated pursuant to a court order or written agreement. If the medical professional has reason to believe that the patient and his/her spouse are separated, proper inquiry should be made.

Other relatives

All potential surrogates below the level of spouse must be denied priority if, prior to becoming incompetent, the patient so requests. The Act states that a potential surrogate may not be given priority "if the attending physician or health care professional has actual knowledge that, before becoming unable to consent, the patient did not want that person involved in decisions concerning his care." An interesting question is whether one member of a health care "team" is deemed to have the "actual knowledge" of another member of the team. In order to keep this issue academic, any member of a team acquiring such knowledge of a patient's desire should appropriately flag the chart.

It is evident that the surrogate priority rules are quite technical and that precise compliance with the law is potentially cumbersome. Mistakes can easily be made but the Act gives protection from suit for surrogate selections made in good faith. In most situations, the medical professional should be able to properly select the surrogate without difficulty. In unusual situations, however, where the priority rules are unclear, it may be appropriate to obtain legal advice if time permits.

Temporary Incompetence

As discussed above, the threshold step in obtaining substituted consent is the certification of inability to consent. The part of the certification dealing with the "probable duration" of the incompetence is particularly important. If the patient's incompetence is "temporary," substituted consent may not be used unless waiting for the patient to regain competence would be detrimental to his/her health. These requirements have practical significance when patients have been given sedatives or narcotics and consent is needed for a particular procedure. The law is clear. Unless delay would be detrimental to the patient's health, a proposed procedure must await direct consent from the patient, and direct consent from the patient must await the regaining of competence.

These issues may be more troublesome than they appear at first blush. When is a delay detrimental to a patient's health? If a patient is under general anesthesia and revised consent is required due to a needed change or addition to an operative procedure, does the risk of a second course of general anesthesia constitute a detriment to the patient's health justifying obtaining consent from a family member in the waiting room? At what point do sedatives or narcotics create incompetence? Is an alert and conversant young patient who has received a significant dose of a narcotic "unable to consent" under the statutory definition? These are the types of questions which need to be asked during the shakedown cruise with the new law as the profession endeavors to revise its policies and practices of dealing with temporary incompetence.

The Unavailable Surrogate Exception

This exception to the informed consent requirement was not previously recognized in South Carolina and its creation by the Act addresses the problem of the incompetent patient with the broken hip who has no family. A new exception to the *legal* informed consent doctrine has thus been created. An academic question remains as to the existence of such an exception to the *ethical* doctrine of informed consent.

Two requirements exist for using this exception and their presence should be properly documented. First, it must appear that no potential authorized surrogate is "reasonably available," interpretation of this term being left up to the good faith judgment of the health care professional. Second, the health care professional must reasonably conclude that the proposed health care "is necessary for the relief of suffering or restoration of bodily function or to preserve the life, health, or bodily integrity of the patient." These documentation requirements are incorporated into Part III, "Authorization for Procedure" of the sample form in Figure 1.

The Emergency Exception

The new legislation essentially formalizes previous practices of providing health care in emergencies without direct or substituted consent. An emergency situation sufficient to invoke the exception occurs when, in the reasonable medical judgment of the health care professional, delay occasioned by attempting to locate a surrogate "presents a substantial risk of death, serious permanent disfigurement, or loss or impairment of the functioning of a bodily member or organ, or other serious threat to the health of the patient." (The Act also states that health care for the relief of suffering may be provided without consent at any time that a surrogate is unavailable.) An emergency also justifies the use of substituted consent from a family member of lower priority if higher priority surrogates are not "available immediately." Substituted consent should not be completely ignored in emergencies. If time permits obtaining consent from "immediately available" surrogates, it should be obtained.

As with non-emergency situations, documentation of inability to consent is required. The two physician certification can be used or an alternate certification by a single "health care professional" is permitted. The Act defines "health care professional" as "an individual who is licensed, certified, or otherwise authorized by the laws of this State to provide health care to members of the public." The health care professional signing such a certificate must be "responsible for the care of the patient" and he/she must document in the certification, in addition to the requirements described previously, that a delay occasioned by obtaining certification from two licensed physicians would be detrimental to the patient's health. The sample form in Figure 2 dealing with authorization for emergency procedures incorporates these requirements.

Surrogate Decisions Inconsistent with Beliefs or Wishes of the Patient

Irrespective of the existence of an authorized surrogate, proposed health care may not be provided if a health care professional "responsible for the care of the patient" has "actual knowledge" that the proposed procedure is contrary to the religious beliefs of the patient or is contrary to express instructions of the patient given prior to incompetence.

These provisions create obvious pitfalls in teaching hospitals or with multidisciplinary care where numerous individuals are "responsible for the care of the patient" but only one may have knowledge of the patient's religious beliefs or express wishes. Such pre-incompetence beliefs and expressions present problems similar to those encountered when a patient expresses a desire to prohibit certain individuals from serving as surrogates. The same approach is appropriate. The person with actual knowledge of the patient's religious beliefs or desires concerning potential treatment should flag the chart.

Protection for Health Care Professionals

A significant amount of discretion is left to the health care professional in the process of selecting a surrogate and applying the exceptions to the informed consent doctrine.

The Act recognizes the value of flexibility resulting from such professional discretion and provides for protection from civil or criminal liability or disciplinary penalty when decisions concerning the statutory exceptions to the informed consent doctrine are made in "good faith." Similar protection is provided for good faith decisions concerning selection of surrogates. As mentioned above, no good faith defense is provided for decisions made in certifying a patient's inability to consent.

CONCLUSION

The Adult Health Care Consent Act has removed a great deal of ambiguity from the process of obtaining substituted consent for incompetent patients. Such clarification is not, however, without its cost in terms of administration, paperwork and dissemination of information concerning the new rules. These rules are presently in effect and violations, even technical ones, could create legal difficulties. Those who are occasionally presented with situations involving permanent or temporary incompetence would be wise to become generally familiar with this Act and to establish a mechanism, such as standardized substituted consent forms, which will facilitate compliance with the technical definitions and documentation requirements of the legislation.

The types of practical difficulties which may be created are difficult to predict. Should physicians find that clarification of the rules has been achieved at the expense of undue inconvenience and confusion, they should communicate their experiences to either the SCMA or to the S.C. Bar Hospital and Health Law Committee. Those involved in the creation of this legislation want the law to be helpful and would be interested in hearing of problems created by the Act which need correction so that appropriate amendments can be drafted and presented to the General Assembly. ☐

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7. S.C. Code Sections 62-5-310 et seq (Guardianship).
8. S.C. Code Section 44-66-20(6).
9. S.C. Code Section 44-17-410 (Commitment Statute).

FIGURE 1

AUTHORIZATION FOR NON-EMERGENCY MEDICAL CARE WITHOUT PATIENT CONSENT (ADULT PATIENT WITH INABILITY TO CONSENT)

Name of Patient ____ Date __________

Description of Procedure ____

I. CERTIFICATION OF INABILITY TO CONSENT (Any physician may sign certification including those involved in the care of the patient.)

The undersigned physicians certify that they have examined the patient named above and, based on their examination, believe: (Check all that apply)
_____ The Patient is unable to appreciate the nature and implications of his/her condition and the proposed procedure.
_____ The Patient is unable to make a reasoned decision concerning the proposed procedure.
_____ The Patient is unable to communicate a decision concerning the proposed procedure in an unambiguous manner.
The basis for these conclusions is as follows:

____

1. The cause of the Patient's inability to consent is ____

2. The nature of the Patient's inability to consent is ____

3. The extent of the Patient's inability to consent is ____

4. The probable duration of the Patient's inability to consent is ______________________. Delay occasioned by postponing the proposed procedure beyond this time may result in significant detriment to the Patient's health.

______________________________ M.D. ______________________________ M.D.

II. SURROGATE PRIORITIES/SELECTION OF SURROGATE (Based on information reasonably available.)

(Complete until surrogate with priority identified. If, prior to becoming unable to consent, the patient expressed a desire that certain person(s) in priority levels 4 through 6 below not be involved in decisions concerning the patient's care, these desires must be respected. Do not permit any such person(s) to serve as surrogate but select the next available surrogate with highest possible priority.)

1. GUARDIANSHIP ______________________________ (Name of Guardian if he/she exists. Examine probate court document.)
___ Guardian exists, copy of document examined and authority to make health care decision verified. (Make copy of document for chart. If checked, give priority unless next line applies.)
___ Guardian apparently exists but is not reasonably available, is not willing to make decision for patient, or lacks ability to consent. (If checked, no priority.)

2. DURABLE POWER-OF-ATTORNEY ______________________________ (Name of Attorney-in-Fact. Examine Durable Power-of-Attorney.)
___ Attorney-in-fact exists, copy of durable power examined and authority to make health care decision verified. (Copy document for chart. If checked, give priority unless next line applies.)
___ Attorney-in-fact apparently exists but is not reasonably available, is not willing to make decision for patient, or lacks ability to consent. (If checked, no priority.)

3. PATIENT'S SPOUSE ______________________________ (Name of Spouse.)
___ Spouse exists. (If checked, give priority unless either of the next two lines is checked.)
___ Spouse apparently exists but is not reasonably available, is not willing to make health care decision for patient, or lacks the ability to consent. (If checked, no priority.)
___ Spouse exists but Patient and spouse are separated pursuant to a court order or written separation agreement. (If checked, no priority.)

4. PARENT OR ADULT CHILD OF PATIENT ______________________________ (Name and relationship of person to serve as surrogate.)
___ A relative in this class exists and his/her name appears on above line. (If checked, give priority unless next line applies.)
___ Relative(s) apparently exist(s) but none is reasonably available, willing to serve as surrogate, and able to make decisions for the patient. (If checked, no priority.)

5. ADULT SIBLING OR GRANDCHILD OR GRANDPARENT ______________________________ (Name and relationship of person to serve as surrogate)
___ A relative in this class exists and his/her name appears on above line. (If checked, give priority unless next line applies.)
___ Relative(s) apparently exist(s) but none is reasonably available, willing to serve as surrogate, and able to make decisions for the patient. (If checked, no priority.)

6. RELATIVE BY BLOOD OR MARRIAGE WITH "CLOSE PERSONAL RELATIONSHIP" WITH PATIENT ______________________________ (Name and Relationship)
___ The above-named relative is reasonably available, is willing to serve as surrogate, and is able to make health care decisions for the patient. (If checked, give priority.)
___ Relative(s) apparently exist(s) but none is reasonably available, willing to serve as surrogate, and able to make decisions for the patient. (If checked, no priority.)

III. AUTHORIZATION FOR PROCEDURE (Surrogate signs section A, "Consent of Surrogate." If no surrogate, use part B, "Authorization by Health Care Professional.")

(A procedure may not be authorized if it is contrary to the known religious beliefs of the patient or if it is contrary to unambiguous and uncontradicted instructions expressed by the Patient when he/she was able to consent.)

A. *Consent of Surrogate*

I ______________________________ (Name of surrogate) hereby give consent on behalf of the patient named above to the performance of the described procedure. The risks and benefits of the procedure have been fully explained to me and all of my questions have been answered. I believe that the patient's best interests will be served by consenting to this procedure. I further state that I have examined the above priority section previously completed by the patient's health care providers. To the best of my knowledge all blanks are correctly checked and I believe that I have authority and priority to speak for the patient in connection with this matter.

______________________________ (Signature of surrogate.
If surrogate gives consent by telephone, read above language to surrogate after making full disclosure and two witnesses sign here and give title. At least one witness must know the surrogate and recognize his/her voice. Telephone consent from Guardian or Attorney-in-Fact may only be obtained after appropriate document has been examined and a copy is placed in the chart.)

B. *Authorization by Health Care Professional*

I ______________________________ (Name of Health Care Professional responsible for care of the patient) hereby state that, after making reasonable inquiry, have been unable to locate an authorized guardian, Attorney-in-Fact, or family member who is reasonably available, willing, and able to give consent on behalf of the patient named above. In my reasonable medical judgment the procedure described is necessary for the relief of suffering or restoration of bodily function or to preserve the life, health, or bodily integrity of the patient.

______________________________ (Signature of Health Care Professional)

FIGURE 2

AUTHORIZATION FOR EMERGENCY MEDICAL CARE WITHOUT PATIENT CONSENT (ADULT PATIENT WITH INABILITY TO CONSENT)

Name of Patient ______________________________ Date __________

Description of Procedure ______________________________

I. CERTIFICATION OF INABILITY TO CONSENT (Complete "Documentation of inability to consent" and either section "A" or "B")

Documentation of inability to consent (To be completed by two physicians or single health care professional depending on whether section "A" or "B" is used.)

____ The Patient is unable to appreciate the nature and implications of his/her condition and the proposed procedure. (Check if applicable)
____ The Patient is unable to make a reasoned decision concerning the proposed procedure. (Check if applicable)
____ The Patient is unable to communicate a decision concerning the proposed procedure in an unambiguous manner. (Check if applicable)
The basis for these conclusions is as follows:

____

1. The cause of the Patient's inability to consent is ______________________________
2. The nature of the Patient's inability to consent is ______________________________
3. The extent of the Patient's Inablility to consent is ______________________________
4. The probable duration of the Patient's Inablility to consent is ______________. Delay occasioned by postponing the proposed procedure beyond this time may result in significant detriment to the Patient's health.

A. *Certification by two physicians* (Any physican may sign certification Including those Involved in the care of the patient.)
The undersigned certify that they have examined the patient named above and, based on their examination, believe that the patient is unable to consent as indicated in the above documentation:

______________________________ M.D. ______________________________ M.D.

B. *Certification by single health care professional*
The undersigned health care professional states that he/she is responsible for the care of the patient named above and that delay occasioned by obtaining the above two physician certification would be detrimental to the Patient's health. Based on his/her examination, he/she believes that the patient is unable to consent as Indicated in the above documentation:

______________________________ (Signature of Health Care Professional)

II. SURROGATE PRIORITIES/SELECTION OF SURROGATE

(Order of priority of surrogates is: (1) Guardian, with probate court Certificate, (2) Attorney-in-fact, with durable power-of-attorney signed by patient, (3) Spouse, (4) Parent or Adult Child of Patient, (5) Grandparent or Adult Sibling or Grandchild, (6) Relative by blood or marriage who has a "close personal relationship with the Patient." In order to make decisions for the patient, the surrogate must be immediately available, must be willing to make decisions for the patient, and must himself or herself be able to give consent. No person in priority levels 4, 5 or 6 may serve as surrogate if it is known that the patient, prior to becoming unable to consent, did not want that person involved in decisions concerning his care.) (Give the name and relationship of the highest priority surrogate who meets the above criteria.)

______________________________ (Name of Surrogate) ______________ (Relationship to Patient)

III. AUTHORIZATION FOR PROCEDURE (A procedure may not be authorized if it is contrary to the known religious beliefs of the patient or if it is contrary to unambiguous and uncontradicted Instructions expressed by the patient when he/she was able to consent. Complete either "A" or "B" below.)

A. *Consent by Surrogate (Certificate of Health Care Professional must also be completed)*

I hereby give consent on behalf of the above named patient to the rendering of emergency medical care. The nature of the emergency, the nature of the Patient's medical problems and the anticipated diagnostic and therapeutic procedures have been fully explained to me and all of my questions have been answered. I believe that the Patient's best interests will be served by consenting to such emergency medical care. I represent that I have reviewed Section II above dealing with surrogate priorities and I state that my relationship to the patient is correctly stated and I believe that no person with higher priority than me is immedately available to give consent on behalf of the patient.

______________________________ (Signature of surrogate)

Certificate of Health Care Professional

On the Basis of information reasonably available, the undersigned health care professional states that the surrogate giving consent on behalf of the Patient is the highest priority authorized representative who is immediately available. In the reasonable medical judgment of the undersigned, delay occasioned by attempting to locate a person having higher priority presents a substantial risk of death, serious permanent disfigurement, loss or impairment of the functioning of a bodily member or organ, or other serious threat to the health of the Patient.

______________________________ (Signature of Health Care Professional)

B. *Authorization by Health Care Professional (Check applicable blank(s))*

____ No guardian, attorney-in-fact or family member authorized to consent on behalf of the patient is available Immediately to represent the Patient's interests. In my reasonable medical judgment, delay occasioned by attempting to locate an authorized person, or by continuing to attempt to locate an authorized person, presents a substantial risk of death, serious permanent disfigurement, or loss or Impairment of the functioning of a bodily member or organ, or other serious threat to the health of the Patient.
____ In the opinion of the undersigned Health Care Professional, the Patient is suffering to the extent that humanitarian intervention is mandated. The emergency medical care is likely to provide, either directly or Indirectly, some relief to the Patient. No authorized surrogate is available.

______________________________ (Signature of Health Care Professional)

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Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

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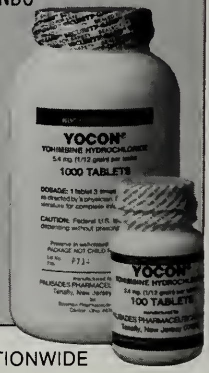

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SCMA NEWSLETTER

JANUARY 1991

MEDICARE UPDATE

At the December Medicare workshop, some important facts were provided. In addition, by this time you should have received a January 1991 Medicare Advisory. Be sure to review these materials. Meantime, following is a summary of this information.

Please make a special note of the Advisory regarding fragmented charges. Medicare has included 68 CPT codes which can be considered fragmented. Please take the time to look at these and make sure your office complies with the guidelines. Medicare will begin auditing these codes beginning February 1, 1991.

Effective January 1, 1991, Medicare Limiting Charges will replace MAACs for nonparticipating physicians; you will not, however, be mailed your 1991 data until January 31. In the meantime, you are advised to continue to bill using your 1990 MAAC.

The Medicare Part B deductible increases from $75 to $100 per month effective January 1, 1991.

Health Manpower Shortage Area Bonus

Prior to January 1, 1991, only physicians who rendered Medicare services in Class I and II rural Health Manpower Shortage Areas (HMSAs) were entitled to a five percent bonus. Now physicians in all HMSA areas can receive a 10% bonus. HMSA areas and necessary billing instructions are included in the January Medicare Advisory.

Common Errors

1. Do not split technical and professional components out on X-rays and EKGs when doing both in your office. File as a global fee.

2. Pap smears are considered a clinical lab test and must be billed on an assigned basis. You cannot charge a collection fee. Use proper level of care and document file.

3. Provider numbers must be placed in the proper square of the HCFA-1500 claim form (Block 31, ID no.).

4. Dually eligible Medicare/Medicaid - must be filed on an assigned basis.

5. For claims being filed for denial, stamp "For Denial Only" in large letters.

6. When documentation is requested on daily hospital visits, send a copy of the daily hospital notes.

7. The assignment block must be completed on all HCFA-1500 forms. Claims without this information will be denied or delayed.

8. Do not check Block 10B on claim forms unless this service is due to an accident. "Other" means other type of accident.

9. Do not put 1990 and 1991 services on the same claim form. They must be on separate claim forms.

Direct Medicare questions to Barbara Whittaker or Cindy Osborn at SCMA Headquarters.

MEDICAID UPDATE

As part of the Omnibus Budget Reconciliation Act (OBRA 90), a child born to a Medicaid eligible mother cannot be denied eligibility for Medicaid for his or her first year of life. Physicians should be aware that these children are not automatically covered nor are they covered under their mother's Medicaid number. A 1716 form must be submitted on behalf of the child to the Department of Social Services office in the child's county of residence in order to notify DSS of the child's birth. Many hospitals automatically send the 1716 form. You should check with the hospital or county DSS if you have a question regarding an infant's eligibility.

Once other OBRA 90 changes are evaluated and implemented, physicians will be advised through Newsletter updates and/or Medicaid Bulletins.

Pediatric Access to Care

The State Health and Human Services Finance Commission has targeted 1991 as a year of increased attention to pediatric access to care. Mr. David Jernigan has recently been hired by the Finance Commission to perform the duties of Medicaid Program Manager for Pediatricians. He will be visiting pediatric offices throughout the state to explain recent enhancements in the Medicaid Program and to educate billing staffs on successful billing procedures in an effort to increase physician participation in Medicaid. Workshops will also be held on a monthly basis throughout the state. Dates, locations and starting times of these workshops will be provided in a Medicaid bulletin in late February or early March. Pediatricians interested in learning more about the Medicaid Program are encouraged to call Mr. Jernigan in Columbia at 253-6134.

Accept Your Fair Share

In response to provider concerns, the Finance Commission has made significant improvements in its auditing activities. The Commission has increased its educational activities offered to physicians' offices. The SCMA's Primary Care, Medicaid and Indigent Care Committee requests all physicians to accept their fair share of Medicaid patients and to inform the committee or staff if your office experiences or hears of any problems with Medicaid.

Waiver of Signature Requirement for Telephone Prescriptions

As a result of input from the SCMA's Primary Care, Medicaid and Indigent Care Committee, telephone prescriptions will no longer require a prescriber's signature prior to being billed to Medicaid. (All SC Board of Pharmacy and federal DEA regulations, however, must be adhered to regarding the dispensing of telephone prescriptions.)

Telephone prescriptions for "brand medically necessary" pharmaceuticals must continue to be signed by the prescriber in the prescriber's own handwriting, i.e., the handwritten phrase "brand necessary" or "brand medically necessary" must appear on the face of the prescription.

Questions should be directed to HHSFC staff in Columbia at 253-6179.

1991 COMMUNITY SERVICE AWARDS FOR COUNTY MEDICAL SOCIETIES

By the time this newsletter reaches you, your county medical society president should have received a call for nominations for the SCMA awards program to recognize a county medical society for its service to its community.

The 1990 winner of this award was Anderson County Medical Society for its "Walk with the Docs" project to support the Anderson Free Medical Clinic.

If your county society has a special project to benefit your community, encourage your president to complete the nomination form and return it to the SCMA prior to February 23, 1991. The winner will be recognized at the 1991 Annual Meeting in Charleston in April. This event will generate publicity in the media and your community and will serve to remind South Carolinians that SCMA physicians care.

For additional information, contact Joy Drennen at SCMA Headquarters.

SCMA LEADERSHIP CONFERENCE SCHEDULED

The 1991 SCMA Leadership Conference will be held in Columbia on Wednesday, February 20, 1991 at the Columbia Marriott. Important topics to be presented include updates on legislative issues, Medicare, DHEC, special projects of county medical societies, and medical/legal issues.

Invitees include SCMA and SCMA Auxiliary leaders, committee chairmen, county society officers, and student and house staff representatives.

Watch for a mailing from SCMA Headquarters or call Barbara Whittaker for more details.

COLORECTAL CANCER SCREENING

Elderly people who participate in South Carolina congregate meal sites will be given the opportunity for free fecal occult blood screening over the next three years through a grant funded by the National Center for Nursing Research and the National Cancer Institute. The participants' physicians will be notified of the results of the fecal occult blood screening. In addition, the physicians will be asked to indicate which colorectal screening procedures have been performed. Frederick Greene, MD, USCSM, is medical consultant for the project. For additional information, contact Sally Weinrich, PhD, RN, in Columbia at 777-3554.

UPCOMING CONFERENCES/WORKSHOPS

The SC Hospital Association will conduct a one-day obstetrical and neonatal risk management program on February 13, 1991 at the Embassy Suites Hotel in Columbia. Physicians, risk managers, quality assurance coordinators and other interested persons are encouraged to attend. Since obstetrical and neonatal claims in SC are highly visible and present significant public relations as well as financial impact, this program is designed to provide concrete guidance to hospitals and clinicians.

For additional information, contact SCHA, in Columbia at 796-3080.

The AMA will be holding the following workshops:

Greensboro, NC: Insurance Processing and Coding, April 9; ICD-9 Coding for Doctors' Offices - April 10; CPT Coding and Medical Collections Management - April 11; Business Side of Medicine- April 12.

Raleigh/Durham, NC: Joining a Partnership or Group Practice- June 6; Starting your Practice - June 7-8.

Please call the AMA at 1-800-366-6968 for further details.

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BREAST CANCER: HIGHLIGHTS FOR THE NINETIES

HENRY P. LEIS, JR., M.D.*

The effectiveness of early breast cancer detection, especially in an occult stage by mammography, in improving disease free survival and overall survival rates and in reducing mortality, has been scientifically established. In the same vein, the detrimental effects of delayed diagnosis and of reliance on a negative mammogram when there is a palpable mass, is well recognized.[1]

Although, of the three methods for early detection, namely breast self-examination, health professional examination and mammography, the latter is the only one that can detect cancer in a truly early preclinical stage when a lesion is too small to be palpated, they are all needed working together as partners and not competitors. Upwards of 10% of clinically palpable breast cancers can't be detected by mammography indicating the need for health professional examinations, and some 20-25% of breast cancers are detected by women doing monthly breast self-examinations between annual or biennial mammograms and health professional examinations, indicating the need for breast self-examinations.[1]

The American Cancer Society guidelines regarding breast physical examinations for asymptomatic women are (1) every woman should do monthly, post menses, breast self-examinations over the age of 20, (2) those aged 20-40 should have a breast examination by a health professional every three years, and (3) those over 40 should have a yearly breast examination by a health professional.[2]

The guidelines for screening women by mammography are (1) all women aged 35-39 should have a baseline mammogram, (2) all women aged 40-49 should have a mammogram every one to two years depending on risk factors, and (3) all women aged 50 and over should have a yearly mammogram.[2] Since breast cancers grow more rapidly in younger women, with an increased chance of having interval cancers detected between periodic physical breast examinations and mammography, it is now being suggested that the guidelines be reversed with annual mammography and physical breast examinations being done yearly in women aged 40-49 and biennially thereafter.[3] With current low-dose equipment any oncogenic risk from mammography is minimal if it exists at all. Also with the new techniques cancers can be detected practically as well in women aged 40-49 as in those aged 50 and over, which was a drawback in the past. To get the best results with mammography requires (1) skilled technicians, (2) dedicated equipment, and (3) expert interpretation.

Of even more importance than early diagnosis is prevention. Genes and growth factors play an essential role in the pathogenesis of human breast cancer, which is the result of multiple events involving many genes, functioning at various levels of expression over a long period of time. Great strides are being made in genetic and growth factor research which offer high hopes of preventing this dreaded disease in the future. In the meantime, much can be done to reduce the incidence of breast cancer by avoiding known promoters in its pathogenesis such as environmental carcinogens. More must be done to reduce or eliminate the known 50 carcinogens in the United States environment and the more than 250 more possible carcinogens. Immunosuppressant agents must be avoided and hormones must be administered in proper dosage and time frame periods and be properly monitored. Currently cancer risk can be reduced by a low-fat, high-fiber diet, appropriate vitamin and mineral supplements, a reduction in caloric intake, avoidance of, or limiting the consumption of alcohol, avoidance of obesity and proper exercise.[4]

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Biopsy and microscopic examination of the tissue removed is the only way of determining with absolute accuracy whether a breast lesion is benign or malignant. There now seems to be general agreement that in most cases formal biopsies should be done as two-step procedures, with removal of the tumor only and reliance on permanent paraffin sections for diagnosis before discussing therapeutic options based on the evaluation of detailed prognostic parameters. The aspiration of cysts rather than excising them has become routine. Fine needle aspiration biopsies (FNAB) of solid tumors with cytologic diagnosis, are becoming increasingly popular enabling the physician to tell the patient her probable diagnosis quickly, but supplemental formal biopsies are usually recommended. Occult lesions found by mammography are best biopsied under needle localization, with or without dye injection, so that the biopsy can be done with a minimal amount of deformity to the breast.[5-7]

As to local-regional therapy, currently there are two main options for women with potentially curable Stage I and II breast cancers. Either a modified mastectomy with immediate or delayed breast reconstruction if desired, or lumpectomy combined with axillary dissection and radiotherapy.[1-7] At present axillary dissection for staging is needed in both procedures but in the future it may be possible to evaluate these nodes for metastases by injecting radiolabeled monoclonal antibodies and scanning the nodal areas with a gamma camera.[7]

Mastectomy is a viable alternative for any woman. It can be performed by a competent surgeon in any hospital. On the other hand about 25% of women are not good candidates for breast conservation procedures with radiotherapy. Women who are not good candidates for breast conservation with radiotherapy include those who are pregnant, and those with more than one primary, gross multicentricity (widespread microcalcifications), discrepancy between tumor size and breast size making a good cosmetic result impossible, unobtainable negative biopsy margins, comedo type intraductal carcinoma in situ with necrosis in the primary tumor mass, very large fatty breasts, augmented breasts because of the likelihood of dense fibrous capsule formation, collagen disease, and medical infirmity making daily travel for radiotherapy very difficult. Acceptable cosmetic results are hard to obtain in women with tumors in the upper inner quadrant as they are in women presenting with nipple discharge or subareolar tumor, unless nipple areolar resection is acceptable.[7,8]

In addition, radiotherapy is a time-consuming procedure that must be given in a center with highly skilled personnel and dedicated equipment. If a woman is not a good candidate for a breast conservation procedure with radiation she should be so advised and not simply allowed to make her own choice as to which therapeutic modality she prefers. This is especially important in young women aged 35 or younger whose breast could be adversely affected by large doses of radiation and where there are no good long-term follow-up findings on the effects of large doses of radiation to the chest wall. Many women do not want a choice. They view the offer of choice as evidence of the surgeon's uncertainty as to what would be best in their particular case. In addition, if they have a recurrence many can not adapt psychologically because they believe they made the wrong choice. The surgeon should advise the patient as to which of the two main options he feels is best suited for her individual situation after discussing the pros and cons of each. Some reports indicate that breast conservation procedures reduce psychological morbidity in the short-term but this does not hold up on long-term studies. Whatever the primary therapy, women still have to confront the fact that they have had a cancer, a life-threatening disease, which may recur. This is the factor of main importance. Even if there is a short-term psychological benefit this is offset by greater worry about cancer being left behind and about long-term adverse effects from radiation.[7,9]

The survival rates, local recurrence rates, arm edema percentages and costs are similar for the two procedures. However, local recurrences in the chest wall after mastectomies are usually manifested earlier and carry a worse prognosis than those in the remaining breast after conservation procedures with radiotherapy, where salvage mastectomies can frequently be effective. The ultimate decision must be up to the patient but she should be carefully counseled and advised so that she can make a good informed decision. Currently in the United States about 25% of women with potentially curable breast cancers are being treated by breast conservation procedures with radiotherapy and 75% by mastectomies.[10]

A number of trials have demonstrated an improvement in disease free survival (DFS) and overall survival (OS) in women with node positive Stage II breast cancers with adjuvant systemic chemo-endocrine therapy. The National Cancer Institute estimate of survival benefit is 7-10.8%. Recent trials have also shown a statistically significant improvement in DFS in both pre and post menopausal node negative Stage I patients. Currently there seems to be general agreement that a six-months' course of adjuvant chemotherapy with CMF (cytoxan, methotrexate and 5-fluorouracil) should be standard therapy for node positive premenopausal women and that tamoxifen, an anti-estrogen, should be standard therapy for postmenopausal, node and hormone receptor positive women, administered over a five-year period. As to patients with node negative cancers there is no definite agreement. Although trials have shown an improvement in DFS, figures on OS are not yet available. However, any improvement would have to be very small if adjuvant systemic chemo-endocrine therapy was administered to all node negative patients. There are over 70,000 new cases yearly in the United States and at least 70% of these will have a good prognosis with just local-regional therapy. Many physicians feel that detailed prognostic parameters should be used to define the sub-group of women with a poor prognosis who might be benefited by adjuvant systemic chemo-endocrine therapy rather than giving it to all node negative women. The long-term effects of chemotherapy on women with a good life expectancy is still not known but it is known that it is toxic, that it has untoward side effects and that it reduces host resistance.[7]

Numbers of randomized, prospective, controlled, clinical trials have been and still are being conducted, aimed at evaluating the efficacy and safety of various therapeutic options, both local-regional and systemic. These trials, especially the National Surgical Adjuvant Breast Projects (NSABP), have contributed greatly to our knowledge about breast tumor biology, the management of patients with breast cancers and the value of various prognostic indicators, and should be supported. Good prognostic parameters are essential for determining how virulent or aggressive a given cancer is so that appropriate therapy can be selected. Currently beyond the well-established prognostic indicators of stage, tumor size, multicentricity, mitotic index, invasive status, histologic type, tumor grade or differentiation and nodal status, other parameters are being used to evaluate the degree of differentiation and growth rate of cancers, including cell mediated immunity tests, estrogen and progesterone receptor levels, flow cell cytometry studies for ploidity and s-phase fraction, monoclonal antibody DF3, cloned HER-2 neu oncogen protein, cathepsin D and thymidine labeling index.[11]

Of the three main fronts in the war on breast cancer, prevention is obviously the most important, followed by early detection and then by appropriate therapy, all of which are making inroads in this most common cancer in women. Ten percent of women will develop it during their normal life expectancy, with some 150,000 new cases being expected in the United States in 1990.

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Editorial

GAMES PLAYED WITH BALLS

What Thomas Jefferson had to say has generally stood the test of time, but I protest the following: "Games played with the ball... stamp no character on the mind."[1] Games not only stamp character; they test it. Games give us useful metaphors for the rest of life.

The running back—head down, legs churning, arms clutching the ball—shows us how to make it through the day one yard at a time. The infielder—knees flexed, glove low, body square to the line of flight—shows how to handle life's unexpected bounces. The jump shooter—eyes fixed to the hoop while arms and bodies flail all about him—shows how to block out the distractions. Pick any sport and you'll find the metaphors you need.

We need them not only as individuals, but also collectively. As this issue goes to press (early December 1990), drums of war echo from the Persian Gulf while rumors of recession circulate at home. As a profession, we brace for sweeping change as we look ahead toward the next century. Looking back over this one, what metaphors might serve us in the near future? Pick any sport.

Yankee Stadium, July 4, 1939. The speeches were over, and all eyes and ears focused on the lone figure near home plate. The whole nation knew the painful truth: the fibers were not of iron, after all—in fact, they would soon be gone. So what does one say when they hand you the microphone and everybody already knows your grim prognosis? Standing tall in his pin-striped uniform, he proudly proclaimed himself the luckiest man on earth. Henry Louis Gehrig, 1903-1941. Lou Gehrig—courage.

The Superdome, New Orleans, March 29, 1982. The big coach watched as the final seconds ticked from the clock, the national championship seemingly his. Then one of his players succumbed to a fake and threw the ball straight into an opponent's hands. So what does one do when the buzzer sounds and one faces the player who threw it all away? Draping a bear hug around the hapless young man, he reminded us all that it was just a game after all, that what matters is not trophies but people. John Thompson of the Georgetown Hoyas—compassion.

But for a metaphor especially relevant to medicine today, I choose Centre Court, Wimbledon, 1980. It was Bjorn Borg's finest hour in retrospect, but at the time this was far from obvious. In the young John McEnroe, Borg had met his match and he knew it. Point after point he slugged away, his steely concentration a testimony to that most primeval of needs: survival. Then, late in the fifth set, he stopped and searched the crowd for familiar faces. It was the television commentator who conveyed the moment's significance: "He's regrouping."

Regroup. My dictionary tells me that this verb's main usage is a military one: "to reassemble or reorganize (one's forces), as after a battle." Today's usage suggests expanded meaning: to examine one's priorities, to take measure, to stay in focus. The nineties: a time for medicine to regroup.

But I would be remiss to imply that we learn useful metaphors only from the spectator sports. Even more relevant are those we learn the hard way, by competing ourselves at whatever level of athletic proficiency. Of the many I've learned that way, none proved more useful than one given at just the right time some years ago on a tennis court.

My tennis game was entirely self-taught and nothing to brag about. True, I could hit serves and backhands with reasonable confidence that the ball would remain in play, if without much spin. But the forehand drive—the staple shot in the good player's repertoire—was another story. Demanding extension and pronation of the forearm in perfect timing with shifting weight and the ball's arrival, the shot seemed inordinately complicated. I just couldn't get it right. And it's difficult to enjoy tennis without a trustworthy forehand.

I resolved to take lessons and found a coach. He made one suggestion after another. We tried different methods for hitting the shot, including one he called "the loop." Nothing worked. "The doc's forehand" became a standing joke between us.

On a near-freezing and heavily-overcast March day, I braced for yet another humiliation on the practice court. Unbeknownst to the coach, I also had a much greater problem than my forehand. The cruel world had dealt me an overhand smash, and I wasn't at all sure that I could battle back. As we began to hit balls, it became obvious that my forehand was worse than ever. Shot after shot either sailed into the net or over the baseline—sometimes over the high fence and onto the parking lot.

Twenty minutes into the lesson, it began to snow. The coach and I laughed simultaneously. He asked: "Doc, how about another time?" "No," I vowed firmly. "I'm going to stay right here until I get it right this time."

Moments later, the coach came to the net. "Doc, I think I've noticed something. You're coming *in* with your racket, across your body." He drew his racket across the chest to illustrate the point. "Reach *out* for the ball. Reach *out...reach out!*"

I did as he said. I began to reach out for the ball. It worked. Soon, I was hitting the ball with authority, consistency, and topspin. One hard shot after another cleared the net and nose-dived onto the opposite court. By the end of the lesson, the snow was beginning to stick—and so was my newfound tennis self-confidence.

To be truthful, I never became a good tennis player. A few months later, I tried too hard for a drop shot and came to rest entangled in the net on a dislocated left shoulder. I left tennis but kept the metaphor. My off-court cloud soon lifted. The sun came out of hiding.

Reach out. In medicine, to an extent not found in any other profession, we constantly strive to eliminate our own necessity. Yet it is by reaching out, taking on new problems, incessantly striving to improve the lot of humanity, that we keep right on demonstrating our usefulness. We cannot afford to rest on our laurels. Reach out...reach out!

We know that by the year 2000 there will be many changes, some of them technology-driven, some consumer-driven, some legislation-driven. We know that our own interest and the public interest should coincide to the greatest possible extent. We know that the best way to insure this desideratum is through participation in organized medicine. It is through organized medicine that we best restore values—not as specialists or subspecialists but as physicians.

Regroup. Reach out. Those are my metaphors for today. But the marvelous thing about games played with balls, Mr. Jefferson, is that the metaphors are endless. I'm learning new ones with a different game; someday, gentle reader, I hope to write one on "The Secret of the Secret." Meanwhile, it's no secret that we can be effective only by acting together. We must share not only common problems but also common inspirations.

—CSB

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Letter to the Editor

To the Editor:

I read with great interest the article by Dr. McIntyre et al about coronary bypass surgery for the elderly in your August issue. I want to state that I found his results in the elderly population with a 3.6% operative mortality to be excellent. I just wanted to discuss several points of note which I have found in our series of patients.

One major point is his reference to the patient's physiologic or chronologic age. I think this is important since no matter how good the patient may look, the chronological age has a definite effect in the postoperative morbidity because of the multisystem problems which can develop in one of these patients. I noted that their group used the internal mammary artery in approximately 40 percent of the patients and I believe that in the population over 80, all vein grafts vs. internal mammary arteries are used because of less postoperative pulmonary morbidity and sternal healing problems. Longevity of the grafts may not carry as high a priority as it would in a younger patient. There were two major points of difference in the article. They referred to the increased incidence of possible CNS events and I think this is just an accepted risk in this age group. Most of us would try to use a higher perfusion pressure while on the bypass with a thorough preoperative evaluation. Postoperative CNS and other systems, i.e. renal problems, may be unavoidable in this population. Due to these factors, pulmonary problems, arrhythmias and general morbidity accounts for the prolonged stay of 12 days which I think is actually a quite acceptable length of stay for these folks. I agree totally with the authors that this patient group, albeit their morbidity and mortality is higher, should still be offered myocardial revascularization as their long term benefits are excellent. As the 90s progress and produce more and more of these folks as our population ages, we will continue to have myocardial revascularization or other cardiac procedures and it will be more commonplace in the practice of cardiac surgery.

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THE INTERIM MEETING OF THE AMA
REPORT OF THE SCMA DELEGATION

JOHN C. HAWK, JR., M.D.*

This report of the Interim Meeting of the AMA, held in Orlando, Florida, December 2-5, 1990, will be relatively brief for several reasons: First, the meeting was a remarkably non-controversial one and the news to report is considerably less than usual; second, most of the important items have been reported in AM News in December, and will have been available to all of you before this is printed in The Journal; finally, I have more than a little doubt as to whether this "opus" is read sufficiently to make a more detailed report worthwhile. Your comments to the next Chairman of the Delegation, Randy Smoak, elected at this meeting, will be appreciated.

HIV (AIDS) - THE DOMINANT ISSUE

Two reports from the Board, three reports from various councils, and at least eight resolutions dealt directly with this problem; some others also probably reflected on it indirectly. After a great deal of discussion, the House recognized that medical science has developed treatment options which can delay the conversion of a patient from being seropositive for HIV infection to a patient dying from an AIDS-related disease. With the knowledge that early detection of HIV infection is even more imperative than before, the House of Delegates adopted a resolution supporting "the classification of HIV (AIDS) as a communicable and a Sexually Transmitted Disease (STD) and the control measures attendant to its classification."

The House directed the Board of Trustees to bring in a revised Policy on HIV. Among other recommendations, this included the following:

o That the AMA continue to encourage correctional systems at the federal and state level to provide comprehensive medical management which includes mandatory HIV testing, followed by appropriate treatment for those who are HIV infected.

o That the AMA support mandatory HIV testing of donors of blood and blood fractions, organs and other tissues intended for transplantation, and semen or ova for artificial conception; and that AMA also support mandatory testing of military personnel.

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o That the AMA support uniform protection, at all levels of government, of the identities of those with HIV infection or disease, consistent with public health requirements.

o That the AMA encourage that patients receive general information on the limits of confidentiality of medical records on the initial medical visit. Specific information on the limits of confidentiality should be provided before the patient receives HIV-related services or when a patient is counselled about HIV testing.

o That the AMA endorse policy to enable physicians to confidentially discuss a patient's sero status with other healthcare workers involved in the patient's care without fear of legal sanctions.

o That the AMA strongly recommend that states adopt a system of contact tracing and partner notification in each community for unsuspecting sexual or needle-sharing partners who might have been HIV-infected.

o That the AMA strongly recommend that all states, territories, District of Columbia and local Health Departments adopt a requirement of the reportability of HIV seropositivity of patients to their respective Departments of Health. Strict confidentiality must be maintained by each state, territory, District and local department of health.

OVERVIEW OF MEETING

This was one of the busiest House of Delegates meetings on record. One hundred ninety-four resolutions, and 106 Board and Council reports were considered. The House adopted policy on a wide variety of national issues of critical importance not only to practicing physicians but to the public.

There were 435 Delegates seated, of which 348 represented state medical associations, 77 represented national medical specialty societies, and 10 Delegates represented medical students, resident physicians, hospital medical staffs, medical schools, young physicians, and the military and public health service and Veterans' Administration.

ADDRESS OF THE PRESIDENT

Dr. C. John Tupper, AMA President, gave a stirring report which he termed a "veritable parade of progress attained." He noted that the AMA had been willing to take risks and stand up for the profession in many ways when the chips were down, including the following:

o A vigorous call for the removal of Inspector General Richard Kusserow from his position.

o The AMA leadership role in the development of practice parameters as a way of improving the quality of care patients will receive.

o The AMA proposal to extend quality medical care to everyone, called "Health Access America."

Declaring that "the new AMA is more effective at our number one job, the job of representation," Dr. Tupper said, "By putting together all the attributes of the new AMA--strength, boldness, imagination and our leadership in education and quality--we are better able to stand up effectively for physicians and for our patients."

AMA BUDGET, FISCAL YEAR 1991

The Board of Trustees presented a 1991 Plan and Budget calling for no dues increase in 1991. The operating revenues will be $189.8 million and operating expenses $186.0 million. Budgeted income taxes of $1.7 million and non-operating expenses of $2.0 million will leave the Association with a bottom line of $136,000.

The report highlighted four areas of focus for 1991:

1. Professionalism/Standards
2. Physician Autonomy
3. Health of the Public
4. Support and Service Activity

The House commended the Board of Trustees for its responsiveness in providing information about total compensation of officers and the EVP, and also on its demonstrated fiscal responsibility.

ADDITIONAL ITEMS OF INTEREST

The House took the following actions which were of particular interest to our Delegation and I believe will be of interest to you.

o The House adopted an excellent report by the Council on Ethical and Judicial Affairs discussing the ethical issues raised by the practice of gift giving by industry to physicians.

o Prompted by reports of physician involvement in an execution by lethal injection in Illinois, the House reaffirmed the AMA's ethical position in opposition to physician participation in legally authorized executions.

o The House recognized the problems involved in the denying of payment by health insurance companies for "pre-existing conditions," and asked for a detailed study and a report at the 1991 Interim Meeting.

o The House asked the AMA to continue its actions to seek the immediate resignation or dismissal of Richard Kusserow as Inspector General of HHS and also to encourage state and specialty societies, and other organizations, as well as individual physicians, to write to President Bush, Dr. Louis Sullivan and members of Congress in an effort to effect the ouster of Mr. Kusserow.

o The House adopted a resolution encouraging every physician to make a commitment to join his/her community in attempting to eliminate drug abuse by the year 2000.

o The House approved a very detailed and thorough report by the Council on Medical Education addressing the complex problems of providing health care services in rural areas and the shortage of physicians in these areas.

o The House approved a substitute resolution asking the AMA to continue to work with the Accreditation Council for Graduate Medical Education to implement AMA policy for residency work hours reform; also to use this policy as a guideline in working with state medical associations to obtain modification, if needed, of pending and future legislation on total residency work hours, conditions and supervision.

o The House discussed at length the six resolutions which dealt with the National Practitioner Data Bank, and adopted a substitute resolution covering many of the problems involved.

o The House modified and then adopted the Council on Medical Service report discussing the PRO Quality Intervention Plan (QIP); the measures adopted afford greater protection for practicing physicians and for residents in training.

SCMA DELEGATION ACTIVITIES

We had an exceptionally hard working Delegation who kept their noses to the grindstone, even though the Marriott Orlando World Center, site of the meeting, was surrounded by a beautiful golf course and there were numerous other attractions within the immediate vicinity. Despite the fact that most of us stayed up until nearly 2:00 a.m. on Saturday night to watch the launch of the shuttle many miles across the Florida peninsula, but still brilliantly seen, we had a full turnout for the Southeastern Caucus at 7:00 a.m. Sunday morning. We also had full meetings at 8:00 a.m. on Saturday and at 7:00 a.m. on Monday, Tuesday and Wednesday. I think that all South Carolina physicians should recognize that you have a truly dedicated group of representatives.

The Delegation included Delegates Randy Smoak with Saundra; Don Kilgore with Jean; and John Hawk with Nancy. Alternate Delegates were Charlie Duncan, with Pat arriving later in the meeting; Dan Brake with Sue; and Walt Roberts with Nancy. John Simmons, President, and Patsy; Ed Catalano, Chairman of the Board; and Chris Hawk, President-Elect, were present for most of the meeting. Steve Imbeau, member of the Board, not only attended but had a special gathering of some young physicians in our suite. Steve Hulecki and Gerald Harmon attended the Young Physicians Section Meeting and were present at almost all of our caucuses. Bob Schwartz was able to attend several of our meetings. Bill Mahon and Barbara Whittaker attended from our staff and made all of the arrangements for us. We also had students, Paul Crawford and Perry Edenfield meet with us.

The Delegation worked late Saturday night making additional plans for the campaign for the election of Randy Smoak to the Board of Trustees in June of 1991. Randy has distinguished himself on the AMPAC Board, especially during the two years he has served as Chairman of the Board and has made splendid reports to the House at each semi-annual meeting. Again, we solicit the help of all physicians in South Carolina in influencing any you may know in the House of Delegates, and also by making contributions to his campaign fund.

This was my last meeting as a Delegate, as I decided last year that I should "make room" for some of the talented younger leaders from our state. The Delegation members were very kind in having a special reception for me Saturday night which was attended by over 700 people. I appreciate greatly the opportunity I have had to represent the SCMA at the AMA House of Delegates since 1968, except for a brief hiatus when I was President of the Association and had to step down as a Delegate because of our bylaw provision prohibiting dual office-holding. I have enjoyed every minute of it and hope that I have been able to contribute to both the SCMA and the AMA. I would like to thank all members of the Association for affording me this wonderful opportunity to represent you.

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On the Cover:

STEPHEN ELLIOTT: (1771-1830)

Stephen Elliott was born in Beaufort, November 11, 1771. After an early education in the private schools of his home town, he graduated from Yale in 1791. Elliott's lifelong interest in botany is represented by his monumental work, *A Sketch of the Botany of South Carolina and Georgia.* The title page of volume I is shown on the cover. The second volume was published in 1824. Several lovely indigenous shrubs have since been named in his honor, as was the Elliott Society of Natural History, founded in 1853. His herbarium, an impressive collection gathered over many years, is in the Charleston Museum.

Perhaps Elliott's second passion was for education. He is known as the "father of the public school system in South Carolina" because of his introduction and active support of the "Free School Act," passed by the Legislature in 1811 while Elliott was a member of the Senate. He had previously served 14 years in the state House of Representatives. His knowledge of the Legislature doubtless aided in his successful effort to obtain an act of incorporation for the Medical College of South Carolina in 1823. In his address at the opening of this new school where he held the chair of Natural History and Botany, he bemoaned the fact that most American medical schools required a much shorter period of study than those on the continent. He challenged the students to remedy these disadvantages. "In moments of leisure, let them not be moments of idleness, retrace the principles, examine the opinions which you may here be taught, and renew the impressions which you may find fading from your memory. Remember that your profession has sacred claims on your time and on your exertions; that your country has a right to demand from you, not the mere acquisition and possession of an honorary degree, but the attention, the diligence, the scientific attainments which give to the character of a physician respectability and dignity."

That Elliott was respected in the academic community is evidenced by his LL.Ds from Yale, Harvard and Columbia and his honorary M.D. from the Medical College of South Carolina.

That he never lacked for a sense of humor we see in this quote from a letter in which he discusses sore muscles resulting from a "jumping contest." He says that the only way "I could alleviate my own pain was to laugh at Mumford [another 'jumper']. I should like to see this accounted for on Philosophical principles."

James Moultrie, Jr., in his eulogium on Stephen Elliott delivered before the faculty of the medical school and the members of the Philosophical Society, quoted Boswell: "He has made a chasm, which not only nothing can fill up, but which nothing has a tendency to fill up. [Elliott] is dead. Let us go to the next best—there is nobody; no one can be said to put you in mind of [Elliott]."

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President's Page

AN URGENT SITUATION

By the time you receive this month's *Journal*, the State Legislature will have been in session for a month. The shakeup of Operation Lost Trust has created a situation in which little is likely to have been done in the first month.

In Washington, last year ended with the Congress paralyzed with budget and deficit concerns. As I write this page, the January 15th deadline for Iraq draws near. With the deadline, Congress is consumed with debate and preparation about the management of that situation.

At the same time that all of this is going on, the President of South Carolina Blue Cross and Blue Shield is reporting continued and even accelerated healthcare cost increases.

Finally, a physician yesterday asked me when there would be mandatory insurance for all employees.

You might ask if there is any relationship between the above items. I have said before that I believe we do not have a federal health policy, and I don't believe we will have one anytime soon.

It becomes all the more important that South Carolina develops a state health policy which will allow for planning and financing appropriate health care for everyone. There are some activities that are cause for hope. The medical association leadership is involved and will remain involved in those activities.

I am anxious that we respond to the urgency of the situation as evidenced in my opening remarks. A strong medical association with an active membership is vital if medicine is to provide the leadership. Your continued support is needed.

John W. Simmons MD

John W. Simmons, M.D.
President

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THE DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL: IN PARTNERSHIP WITH SOUTH CAROLINA PHYSICIANS

GUEST EDITORS: HAROLD D. GABEL, M.D.
ARTHUR F. DI SALVO, M.D.

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INTRODUCTION

HAROLD D. GABEL, M.D.*
ARTHUR F. DI SALVO, M.D.**

The objective of this symposium is to acquaint the physicians of South Carolina with the duties and services of the South Carolina Department of Health and Environmental Control (DHEC). The mission of DHEC is to protect the public's health and environment. As the principal advisor to the state on public health, the department has the responsibility and the authority to prevent, abate and control pollution and health problems. DHEC is involved in a wide spectrum of activity requiring a staff of over 4,000 people, who are stationed at small rural health clinics, county health departments, health district offices, environmental quality control offices, and in the central agency offices in Columbia.

Based on its mission, DHEC activities are organized into three general areas: (1) preventive and curative human health, (2) environmental protection, and (3) regulation of these concerns. Specialized functions within these areas require a high level of expertise, training, and education for the essential services provided and the integration of health and environmental issues. Testing, consultation, and direct services to the public range from basic health care to protection of the milk and water we drink and the air we breathe. An annual budget of over $200 million is available to support these activities.

The papers selected for this issue do not include all the responsibilities of DHEC, but have been chosen as representative of those activities which are most likely to interrelate with practicing physicians. Each article was kept short enough to allow coverage of more topics but of sufficient length to provide the basic information. Telephone numbers are furnished if you have additional questions about any program.

DHEC is seeking to develop a close working relationship with practicing physicians in every county in South Carolina. In many matters, the goals regarding health care for the people of the state are the same. By forming partnerships scarce medical resources can be extended to obtain the maximum effect. DHEC personnel seek to explore new ways of working together. In many cases this has already been done, as will be obvious from reading this issue, but there is always more that we can accomplish.

DHEC's staff includes highly trained, energetic disease investigators, health educators, social workers, nutritionists, nurses, case managers, environmentalists and other professionals available for consultation and patient contact. With your medical skills and the DHEC statewide network, comprehensive health and environmental services can be provided to the people we serve.

Your local health director would be pleased to discuss the programs and any other health or environmental concerns you may have.

The editors wish to express their appreciation to Ms. Julie Lumpkin, Office of External Affairs, DHEC, for editorial assistance. Ms. Lumpkin reviewed and copyedited each paper to assure consistency, uniformity and flow through the entire symposium.

The guest editors welcome your comments on this presentation. □

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* Assistant Deputy Commissioner for Health Services, DHEC, 2600 Bull Street, Columbia, SC 29201.

** Chief, Bureau of Laboratories, DHEC.

SEXUALLY TRANSMITTED DISEASE PREVENTION: A PARTNERSHIP THAT WORKS

TIM LINDMAN, M.P.A.

Over the past several years, the sexually transmitted diseases (STDs) continue to be one of South Carolina's and the nation's most serious public health problems. Not only is AIDS/HIV infection the most devastating disease epidemic of this century, but infectious syphilis, resistant gonococcal infection and chlamydial infections continue to increase at alarming rates. At least seven cancers have been associated with different STDs. The magnitude of long term consequences of sexually transmitted infections, both in terms of financial cost and human suffering, have become major policy issues for public and private health authorities.

Nationally, 63% of all STD cases occur among persons less than 25 years of age. Over 2.5 million teenagers are infected with an STD annually. Proportionately, the same demographic profile appears in the young population of South Carolina. In 1989 early syphilis cases increased by 21% over 1988, and resistant gonorrhea cases rose by 70% for the same period in South Carolina. Over 16,000 cases of gonorrhea were reported in 1989. Congenital syphilis increased to 18 cases per 100,000 live births in 1988 in the United States. Here in South Carolina, five cases of congenital syphilis were reported in 1989. Working closely with the private medical community, the STD Division has developed medical surveillance and intervention protocols which monitor the congenital syphilis prevalence throughout the state.

Explosive drug use behaviors and exchange of sex for drugs practices have accelerated the spread of STDs in high-risk populations. In South Carolina preliminary data indicate that over 35% of all early syphilis and resistant gonorrhea patients reported from selective areas have used drugs. During a recent outbreak in the Darlington/Florence area, disease intervention specialists assigned to the project indicated that the use of "crack" cocaine in the infected population contributed significantly to the outbreak. It was determined that over 80% of the infected patients involved in the outbreak admitted to using "crack" and exchanging sex for drugs with many different partners.

Historically, one of the most important intervention efforts to control the STDs has consisted of maintaining a long and cooperative partnership with South Carolina's private medical community. Since the inception of public health measures to control the venereal diseases in the early 1900s, the private physician has been instrumental in trying to control the spread of the STDs. Traditional indicators of the support and interest demonstrated by South Carolina's private medical community include routine referral of patients with STDs for assistance with case intervention outcomes; utilization of STD diagnostic services available from the Bureau of Laboratories; frequent consultation with DHEC staff physicians regarding patients' diagnostic and treatment procedures; and, of course, a deep sense of community responsibility to prevent the transmission of the sexually transmitted diseases.

One primary source of medical care for the STDs in South Carolina has been the existing network of state and county supported STD clinic facilities. Since many patients possess neither the private health care insurance nor sufficient funds to pay for private care; the publicly-funded, STD county clinics provide an environment for secondary prevention by encouraging and providing early treatment and supportive health education services. Unlike many other areas of preventive medicine, expeditious STD curative medicine is a key part of disease prevention. In several of these facilities, private practitioners provide their professional services and expertise.

County STD clinics in Charleston and Columbia serve as clinical training sites for medical and nursing students, providing updated information and clinical practice opportunities. The importance of these training facilities becomes apparent when a Center for Disease Control (CDC) survey conducted in 1985 indicated that nearly half of all medical schools in the United States offered no clinical curricula on Sexually Transmitted Diseases.

The South Carolina Department of Health and Environmental Control (DHEC) continues to provide the private medical community with a variety of STD prevention services, including:

- Immediate and confidential STD intervention assistance consisting of the patient interview and contact referral services .
- Feedback information to the referring physician describing the results of the case-intervention process and demonstrating the need for continued cooperation.
- Updated and current treatment recommendations, clinical and diagnostic guidelines and local area morbidity profiles.
- Reference assistance for those physicians who desire consultation with STD specialists.
- A confidential depository to report diagnosed and treated cases. Specific patient characteristics and needs can be discussed and evaluated for appropriate follow-up.
- Routine diagnostic services available on a daily basis, including serologic tests for syphilis, darkfield evaluations and diagnostic tests for gonorrhea and other STD conditions.

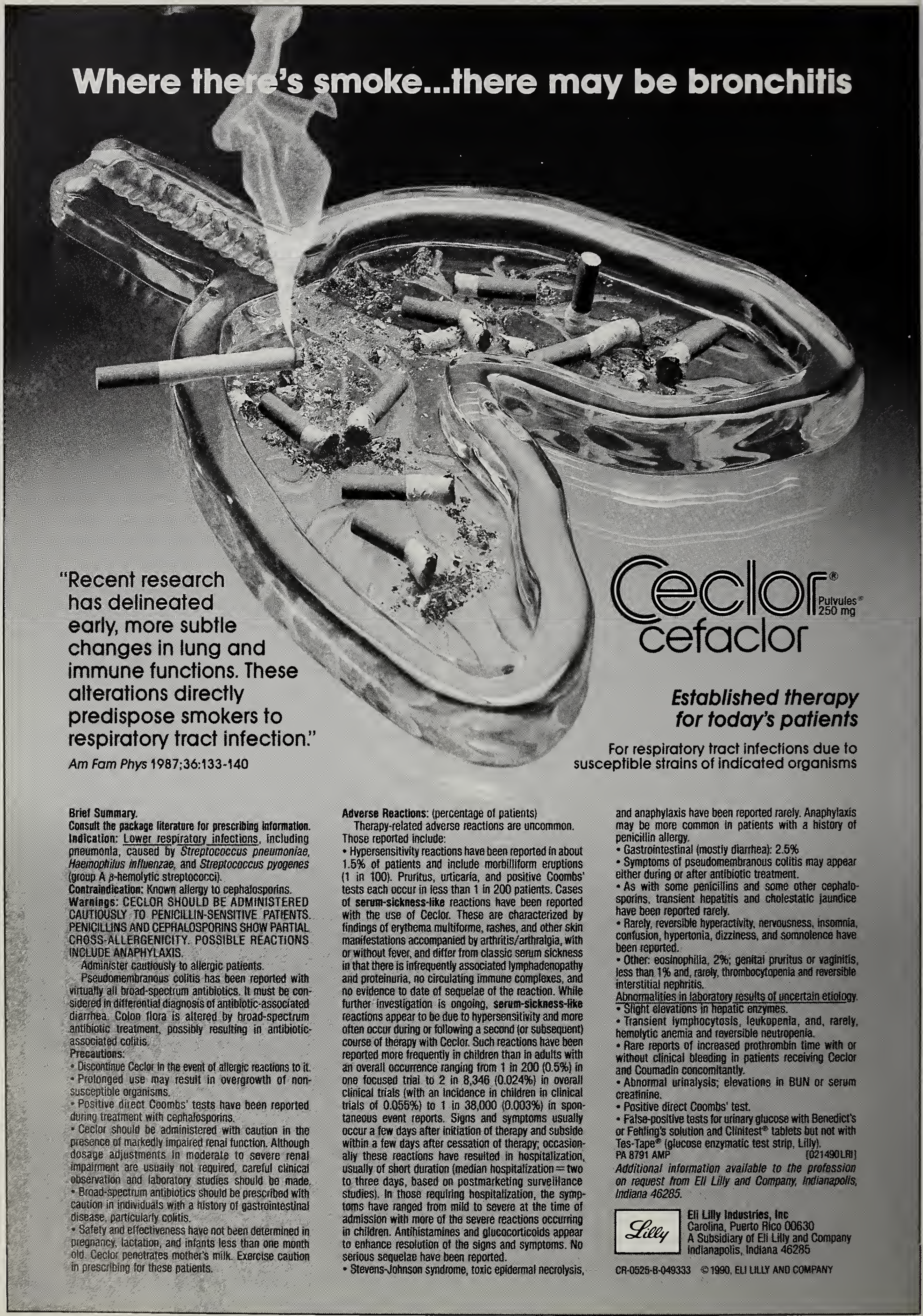
Also, over the years, DHEC has used the legislative process by initiating and mandating statewide public health regulations which have served as a foundation for the public and private medical community to address adequately the STD problem in South Carolina. Specific infection control directives implemented to enhance the intervention and prevention of STDs in South Carolina consist of the following:

- Minor Consent Law—Enables physicians, hospitals and other caregivers to provide medical care for STDs to minors without consent of a spouse, parent or guardian.
- Confidentiality rules protecting against the release of STD information reported to DHEC, pertaining to the care and treatment of STD patients by physicians, hospitals and clinics.
- Enabling authority to conduct serological screening programs for pregnant females.
- STD morbidity and laboratory reporting requirements.

All these procedures provide a comprehensive, interactive relationship between public health and the private medical sector by promoting a patient-oriented and publicly responsible STD control environment.

As in any partnership, it is extremely important that the private practitioner has confidence in the professional integrity of the public health agency in his locality, particularly when it relates to the management of the sexually transmitted diseases. Obviously, the public half of the partnership, including health officers, nursing staff, and other STD control specialists, must consistently demonstrate a commitment to excellence and quality-assured patient service if the partnership is to continue with a mutual commitment to the prevention of the STDs. With over 15,000 cases of gonorrhea, 650 cases of early syphilis, and numerous other STDs occurring in South Carolina annually, the need for a common spirit of cooperation between public health and the private health care system must be continued and strengthened.

For additional information and to share your ideas and comments, please contact Tim Lindman, Director, STD Division, DHEC, 2600 Bull Street, Columbia, S. C. 29201, Phone: (803) 737-4110. ☐



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- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:
- Hypersensitivity reactions have been reported in about 1.5% of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of **serum-sickness-like** reactions have been reported with the use of Ceclor. These are characterized by findings of erythema multiforme, rashes, and other skin manifestations accompanied by arthritis/arthralgia, with or without fever, and differ from classic serum sickness in that there is infrequently associated lymphadenopathy and proteinuria, no circulating immune complexes, and no evidence to date of sequelae of the reaction. While further investigation is ongoing, **serum-sickness-like** reactions appear to be due to hypersensitivity and more often occur during or following a second (or subsequent) course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults with an overall occurrence ranging from 1 in 200 (0.5%) in one focused trial to 2 in 8,346 (0.024%) in overall clinical trials (with an incidence in children in clinical trials of 0.055%) to 1 in 38,000 (0.003%) in spontaneous event reports. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy; occasionally these reactions have resulted in hospitalization, usually of short duration (median hospitalization = two to three days, based on postmarketing surveillance studies). In those requiring hospitalization, the symptoms have ranged from mild to severe at the time of admission with more of the severe reactions occurring in children. Antihistamines and glucocorticoids appear to enhance resolution of the signs and symptoms. No serious sequelae have been reported.
- Stevens-Johnson syndrome, toxic epidermal necrolysis, and anaphylaxis have been reported rarely. Anaphylaxis may be more common in patients with a history of penicillin allergy.
- Gastrointestinal (mostly diarrhea): 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1% and, rarely, thrombocytopenia and reversible interstitial nephritis.

Abnormalities in laboratory results of uncertain etiology.
- Slight elevations in hepatic enzymes.
- Transient lymphocytosis, leukopenia, and, rarely, hemolytic anemia and reversible neutropenia.
- Rare reports of increased prothrombin time with or without clinical bleeding in patients receiving Ceclor and Coumadin concomitantly.
- Abnormal urinalysis; elevations in BUN or serum creatinine.
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly).

PA 8791 AMP [021490LRI]

Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

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CHILDREN'S REHABILITATIVE SERVICES (CRS):

WORKING WITH CHILDREN IN NEED OF SPECIAL HEALTH CARE

SALLIE I. PRUGH, A.B., B.S.N., M.S.N., C.P.N.P.

Children's Rehabilitative Services (CRS) is a program which assures that South Carolina children between the ages of 0-18 with special health problems receive the services they need. Children whose families have an income of less than 200% of the federal poverty level, which is $25,400 per year for a family of four, can receive evaluation and diagnosis. If the child has a condition for which CRS provides treatment, the program will arrange for or provide needed treatment services. The staff at both the local and state level work to make sure that all children with special health needs receive required services even if they are not eligible for the program. This is done by planning with other public and private agencies, as well as sharing knowledge of available resources with families and professionals.

A CASE STUDY

Johnny is an eight-year-old with cerebral palsy and a seizure disorder. He lives in Dillon County with his parents and his two brothers. His father does farm work in the summer and odd jobs in the winter. He is in a special class at school for orthopedically handicapped children. His family is over income for Medicaid; and, although the family has applied for Supplemental Security Income (SSI) for Johnny, he has not yet been accepted for that program. (SSI is a federal program administered by Social Security and designed to help individuals who are blind and/or permanently disabled.) CRS has provided Johnny with a wheelchair and braces and has paid for a bilateral tendon achilles lengthening. He goes to the CRS clinic to see the orthopedist and the pediatrician. If a consultation with a neurologist is needed, this is arranged. CRS pays for his anticonvulsant medication. During the summer, when Johnny is not in school, CRS pays for his physical therapy.

The foundations for CRS were laid with the passage of the Social Security Act of 1935, which revolutionized the way individuals in need received services. Additional grants in the Act provided money for public health and for rehabilitative services, particularly for children. In South Carolina, as in the rest of the nation, this money was used to establish the Crippled Children's Program which helped rehabilitate orthopedically handicapped children. Since many of the children served had residual deformities due to polio, the Crippled Children's Program provided surgical intervention, braces, wheelchairs, physical therapy, clinics, etc. The program also established Camp Burnt Gin, a camp for physically handicapped children, and a rehabilitative center for children who were unable to be cared for at home.

Over the years, the medical needs of the children changed. With the advent of polio vaccine, the number of children with polio decreased dramatically in the mid 1950s. Due to advances in medicine, children who would have died in the past were now being kept alive. If they received adequate care, these children were able to live productive lives. Diagnostic categories added to the program at this time included seizure disorders, rheumatic heart disease and a variety of congenital heart defects. More recently, children with disorders such as cystic fibrosis, juvenile onset diabetes, and sickle cell disease have also been served by the program.

CRS and other organizations concerned about the health and well-being of children must continually watch for emerging health challenges for which current services are not sufficient. These challenges include issues surrounding organ transplants, providing high technology equipment to children in their homes (ventilators, assistive communication devices, electric wheelchairs, etc.), the establishment of multidisciplinary developmental clinics for young children and regional clinics to follow children with pulmonary problems which resulted from being born prematurely and/or prolonged ventilator dependency.

In 1983, in keeping with the changing needs of children, the name of the Crippled Children's Program in South Carolina was changed to Children's Rehabilitative Services. This name emphasizes the program's goal of providing services to those children who, with proper care, can maintain or achieve a level of functioning within society. The federal Department of Health and Human Services changed the name of the Crippled Children's Services to the Program for Children with Special Health Care Needs (CSHCN).

There is a growing realization, both in South Carolina and nationally, that an increasing number of families have no health care insurance. More and more companies and organizations are reducing insurance benefits, and the cost of insurance has risen so that coverage is out of the reach of many families. Even if families do have insurance, their policy may not cover pre-existing conditions.

To address this problem, Congress passed the Omnibus Budget Reconciliation Act of 1989. This act mandated a Medicaid expansion which increased coverage for pregnant women, infants and children. As of the summer of 1990, infants up to the age of one can receive a Medicaid card if the family's income is less than 185% of the federal poverty level ($23,496 per year for a family of four). For children from one year to the sixth birthday, a family can have an income up to 133% of the federal poverty level ($16,896 per year for a family of four). The federal government provides three dollars for every dollar the state spends to provide services through Medicaid. This allows the state of South Carolina to provide more medical care for children for fewer state dollars.

An ever-increasing function of the CRS staff in health departments across the state is working to get children covered by Medicaid. Families are often reluctant to apply for Medicaid because they are proud and do not want "welfare." Program staff try to stress the importance of having a source of payment for all types of medical care including well child care, acute care, dental care as well as rehabilitative services.

Families are also referred to SSI if the child has a chronic debilitating illness or severe handicap. SSI provides a child with a Medicaid card and some money to pay for additional expenses related to the child's illness. Children are also referred to other agencies and organizations such as the Commission for the Blind, Shriners' Hospital, Vocational Rehabilitation and the Easter Seal Society. In a time of limited money, the CRS staff tries to find alternative funding for children on the CRS program. However, the program pays for services if no other funding can be found. Applications to the CRS program are taken at the county health departments. Children can be referred by their physicians, their parents, community health nurses or other interested individuals. Applications are sent to the CRS State office for approval. The application and approval process takes about four weeks, but can be expedited if necessary. Acceptance to the program is based on income and diagnosis. Currently, over 9,600 individuals are served by CRS.

Each CRS district office provides, at a minimum, a pediatric and an orthopedic clinic. Many of the CRS districts also have subspecialty clinics. In some areas, the clinics are joint public/private ventures and in other areas only CRS children are seen. Children from all counties can be treated in the specialty clinics, even if they do not live in that health district. If a child needs to be examined by medical specialists, and it is not appropriate or convenient to be seen in a clinic setting, appointments and funding are arranged by the CRS staff. For example, children with chronic otitis media are seen by the ENT physicians in their offices. The CRS staff also helps arrange for and fund diagnostic and treatment services as ordered by the physician. These include x-rays, laboratory tests, biopsies, medications, appliances, dressings, special formulas, surgery, etc.

CRS also administers state funds which have been appropriated to serve adults with special health problems, such as cystic fibrosis, sickle cell disease and hemophilia.

Children's Rehabilitative Services operates Camp Burnt Gin, an overnight camp, which serves 400 physically handicapped and chronically ill children each summer. While the majority of the children who attend the camp are on the CRS program, any child between the ages of 7-15 living in South Carolina and who is physically handicapped or chronically ill may attend camp. It is the only camp in the state which is totally accessible for individuals in wheelchairs.

CRS has a strong philosophical belief in the efficiency and efficacy of multidisciplinary teams. No one person can provide for the health care needs of many of the CRS children. Each CRS district office has nursing staff, social workers and nutritionists employed to serve the CRS children. Services are also provided by physical therapists, occupational therapists, audiologists, speech therapists, orthotists, dentists and other health care professionals with whom there are contracts or informal agreements.

Many children enrolled in the CRS program have severe, complicated medical problems. Their families are confused and frightened. They need help locating services and understanding the treatment plans. Other families have difficulty understanding the importance of health care and do not follow through with recommendations, miss appointments and are often labeled "noncompliant." In these instances, the CRS staff works closely with the family and the physician to try to help the family find services, obtain transportation, answer questions and help find ways for families to arrange their lives so they can take appropriate care of their child.

CRS does not provide primary care, acute care, general pediatric care or general dental care. In no way does CRS replace the child's primary physician. Ideally, CRS staff work closely with the primary physician, send him or her reports, convey information from the physician to other professionals working with the child and share concerns about the child and the family.

CRS is the program in South Carolina which assures that low income children who are in need of medical evaluation and treatment because of a chronic illness or physical handicap receive the care they require. CRS also works cooperatively with other programs, agencies and individuals to assure that the children of this state grow to their full potential as healthy and productive adults.

For additional information and to share your ideas and comments, please contact Linda Price, Director of the Division of CRS, DHEC, 2600 Bull Street, Columbia, S.C. 29201. Telephone (803) 737-4050. □

THE FUTURE OF INFECTIONS WASTE MANAGEMENT IN SOUTH CAROLINA

PHIL MORRIS, B.S.
LEWIS BEDENBAUGH, B.S., M.P.A.

In response to increased public concern, the South Carolina General Assembly passed the Infectious Waste Management Act during its 1989 session. The Act was the culmination of many months of work by legislative committees, and a coalition of the state's Hospital Association, Medical Association, Dental Association and Department of Health and Environmental Control (DHEC). A simple and flexible piece of legislation, the Infectious Waste Management Act requires that DHEC promulgate the state's first set of regulations specific to infectious waste management. Furthermore, DHEC will regulate only those specific medical wastes for which there is potential of transmitting infectious diseases.

The waste categories which must be considered as infectious are used sharps, microbiologicals, blood and blood products, pathological wastes, contaminated animal carcasses, body parts and bedding and isolation waste from communicable disease cases. It is up to the Department to determine which specific waste items fit into these categories. Nothing will prohibit a hospital or any other generator from designating a particular waste as infectious and managing it as such.

The Administration Procedures Act dictates the procedural requirements for promulgation of regulations and specifies events to take place during this process such as notices, hearings, comment periods and final approval by the General Assembly. The Department is currently proceeding with developing regulations which will be in final form in 1991.

Based on the Act's requirements, once regulations have received final approval by the General Assembly, all infectious waste generators will be required to register with DHEC. It is anticipated that infectious waste generators will encompass a diverse group, including hospitals, nursing homes, residential care facilities, renal dialysis clinics, clinical and research laboratories, ambulatory surgical centers, private practice physicians and dentists, veterinarians, funeral homes, emergency medical services, employee health clinics and governmental health department clinics.

Most in-state physicians and dentists will qualify for the small quantity generator exclusion. Those generators who produce less than fifty pounds per month will have to follow these procedures:

- contain sharps in a puncture-proof container,
- treat microbiological cultures on-site,
- dispose of blood and blood products pursuant to the regulations, and
- dispose of all other infectious waste as other solid waste.

DHEC has estimated that almost 7,000 tons of infectious waste are generated in South Carolina per year. Private practice physicians alone are the third largest generator of infectious waste in the state, collectively producing about 1,500 tons of waste. These calculations were made using the federal government's estimate that private practice physicians generate approximately 1.5 pounds per office per day worked. All infectious wastes will be included in the program except wastes generated within private residences and disposed of as household waste. Although household infectious wastes will not be regulated, guidelines for disposal are available from DHEC at this time. Physicians may want to consider obtaining this brochure from DHEC to provide to those patients using syringes in their homes.

Segregating waste at the point of generation is the key to proper management. The person present at the point of generation knows better than anyone the nature of contamination of a particular waste. Properly segregating those wastes which are listed as potentially infectious can save generators money and effort. Packaging requirements will mandate containers specific for the type and quantity of waste. In general, containers should be rigid or semi-rigid and impervious to moisture. These containers must be properly labeled, tightly closed and secured. Sharps should be disposed of into rigid puncture-proof, leak-resistant receptacles designed for this purpose. Storage standards will require that waste be kept in an area which protects it from weather and vectors, limits access and maintains it in a non-putrescent state. The emphasis of regulatory concern will be concentrated on controls after the waste leaves the generator to be transported to an off-site treatment or disposal facility.

After final regulations are in place, generators who wish to send their waste off-site for treatment will be compelled to use infectious waste transporters which have registered with DHEC, obtained sufficient liability insurance and maintained good compliance records. Transport vehicles will be required to be maintained in a sanitary condition and to be labeled as containing infectious waste. Delivery of the waste must be accomplished in a manner which maintains the integrity of the package. A tracking document will accompany the waste transported off-site to maintain the chain of custody and assure that the generators' wastes are destroyed in an appropriate fashion.

Treatment may be accomplished by any DHEC approved method. The most commonly used treatment methods are incineration, steam sterilization and chemical disinfection. However, the industry is developing new treatment methods which could become more economical and, therefore, more popular. Methods such as radiation treatment with microwaves or gamma waves are currently being developed or have been recently employed in the United States and Europe. There are many advantages and disadvantages inherent in the variety of treatment techniques. Waste producers must evaluate their needs and determine which technique will best suit their situation.

Commercial treatment facilities must receive a permit from DHEC. These facilities will be stringently regulated with the probability of on-site DHEC inspectors. Assurances must be made to generators that the wastes they have sent off-site to be treated are handled in a responsible manner and rendered noninfectious by an approved treatment process. Furthermore, these facilities must be operated by trained staff.

The proposed regulations will mitigate occupational exposure, public exposure, and environmental degradation. To identify the potential for exposure to infectious waste, it is necessary to evaluate the processes undertaken during normal disposal practices. To transmit infectious diseases, it is necessary to have organisms which are human pathogens present in sufficient numbers to cause disease in a susceptible host, as well as a means to expose that host via a mode of transmission. Some critical factors affecting the risk from exposure to these wastes are determining who could be exposed, possible routes of exposure, frequency of such exposure and dose of infectious agents. To prevent such exposures, one must provide barriers which interrupt this cycle. Keys to infectious waste management which provide these barriers are source separation and immediate disposal, proper containment and labeling, maintenance of the integrity of the packaging, proper handling and storage, limiting the number of people potentially exposed, treatment as soon as practical and adequate treatment to disinfect the waste.

Each individual waste category provides distinct characteristics which must be considered in managing that waste. For example, sharps represent the category which is most commonly observed to cause occupational exposures. Recently, it has been estimated by the Office of Technology Assessment that 20% of all hospital needle stick injuries occur during the waste handling process. Since it has been clearly documented in professional literature that needle stick injuries can transmit organisms such as hepatitis B virus (HBV), immediate disposition of these instruments into puncture-proof containers is essential.

Microbiological cultures of human pathogens contain organisms in sufficient concentrations to provide an inoculum capable of producing disease. The culture vessel should be discarded as soon as practical into a container appropriate for treatment and disposal. Since the best mode of treatment for cultures is steam sterilization, bags made of polyethylene, which have color coded surfaces with the biohazard symbol and a tensile strength sufficient to prevent tearing and puncture, serve well as pretreatment containers. These bags should not be tightly closed during the steam sterilization process.

The ability of blood and blood products to transmit many different pathogens, including the HBV and the human immunodeficiency virus (HIV), has been well documented. HBV should cause the greatest concern to health care workers. According to the Centers for Disease Control (CDC), approximately 200 health care workers die each year from hepatitis related illnesses. While studies indicate that only a few health care workers have contracted HIV from occupational exposures, prudent care is still warranted. It remains debatable if any of the documented accidental parenteral inoculations have occurred from wastes. This may be due to the definition of when a used medical item or specimen becomes a waste, i.e., after its intended use or after it has been discarded into a receptacle.

Regardless, HBV is hardy and capable of remaining alive on laboratory bench tops, in vials and on needles from weeks to months. Similarly, other forms of hepatitis virus (non-A and non-B) are blood borne pathogens which may be transmitted by needle stick exposures. HIV, on the other hand, is a much more fragile virus which exists outside of body cells for only a short period of time. Within blood or blood products, HIV is viable for much longer periods. This waste may be carefully poured down a drain which is lawfully connected to a DHEC approved wastewater treatment system. Such drains should be disinfected to prevent colonization.

In most cases, pathological wastes are more of an aesthetic concern since the possibility of disease transmission directly to humans is greatly reduced by containment of pathogens within the waste. However, decomposition of these wastes in the environment can inoculate pathogenic organisms into that environment. While body parts and tissues are best treated by proper incineration, interment is permissible.

Animal carcasses, body parts and bedding can be considered much the same as pathological waste, except that they have the potential for harboring much higher concentrations of organisms. Also, these wastes may contain more virulent organisms since these animals are used in research. Therefore, more prudent handling is justified for wastes of this category. Again, proper incineration is currently the best means of treatment and disposal.

Isolation wastes which need to be handled as infectious are those wastes which are produced in communicable disease isolation, not reverse isolation. Only those cases which involve highly communicable diseases and only those wastes which are outlined by the CDC as needing special handling fall into this category. Isolation wastes are varied in type and, therefore, may lend themselves to equally varied treatment techniques.

For this regulatory program to be successful, a balance must be achieved between public health and environmental concerns, and those of the regulated community. Although occupational exposures to infectious agents are known to occur, the consequences of these exposures is not well-documented at this time. The public in general has clearly expressed its desire not to be exposed to this waste stream. The fear of disease transmission and general repugnance are legitimate concerns.

For these reasons, DHEC will begin regulation of this waste stream by attempting to prevent exposure of the public without encumbering the generators. The program will emphasize regulatory control after the waste leaves the generator. Most of the manpower will be directed to inspections of transporters, transfer facilities and treatment and disposal facilities. The Bureau of Solid and Hazardous Waste Management will be receiving comments on the proposed regulations this fall. Your comments are welcomed.

For additional information and to share your ideas and comments, please contact Phil Morris, Bureau of Solid and Hazardous Waste Management, (803)-734-5448. ☐

SCMA NEWSLETTER

FEBRUARY 1991

HIGHLIGHTS OF JANUARY 18 BOARD OF TRUSTEES MEETING

The board reviewed a variety of upcoming legislative issues of interest to the medical profession, and discussed other plans for 1991.

MEDICARE UPDATE

Medicare Claims Processing

You may have read elsewhere that there would be up to 60-day delays in payment of Medicare claims. Thanks to aggressive AMA lobbying for funding of Medicare claims processing, this delay will not occur. On January 28, AMA learned that OMB had agreed to release approximately $75 million of the Medicare contractor contingency fund. While OMB did not give HCFA the full amount requested, HHS sources indicate that $75 million would be sufficient to avoid two-month delays in physician payments that were predicted if additional funding was not provided. OMB changed its stance after encountering a firestorm of protest from the AMA, various other health care and senior citizen groups, and more than 70 members of Congress.

DME Complaints

We have received numerous complaints regarding a DME company called LifeLine Home Health Care. This company has been contacting Medicare patients and encouraging them to buy/rent Tens units, paraffin baths, glucometers, etc. They then send a form to the physician for his signature. We have sent these complaints to the Medicare carrier for investigation. If you have any complaints or need assistance regarding this company, contact Cindy Osborn at SCMA Headquarters.

Medicare Updates

The mailout of the new Medicare updates is completed. As you know, these printouts do not contain all of the codes you may use. They consist of the most frequently used codes for each specialty. However, you may obtain additional codes by submitting a written request, including your provider number, to Karen Smith, BC/BS of SC, I-20 at Alpine Road, Columbia 29219. If you have questions about your limiting fees, call Ms. Smith in Columbia at 788-3860, extension 2569.

MEDICAID UPDATE

Ira B. Horton, Jr., MD, Named HHSFC Medical Director

Ira B. Horton, Jr., MD, has joined the executive staff as the Finance Commission's new medical director, succeeding the late J. Gavin Appleby, MD. A graduate of MUSC, Dr. Horton is a family practitioner from Orangeburg. He is a naval veteran, having served most recently as a captain in the Medical Corps of the Military Sealift Command, Atlantic.

American Academy of Pediatrics Brochures

In a cooperative effort to promote health education/anticipatory guidance for Medicaid children, DHEC and HHSFC are providing "TIPP - The Injury Prevention Program" brochures, by the American Academy of Pediatrics, for all primary care physicians and their patients. These brochures are available for children ages birth to 10 years. You may order a maximum of 25 copies of each brochure by contacting: Materials Library/Educational Resources, DHEC, 2600 Bull Street, Columbia 29201 or call 737-3941 in Columbia.

WASHINGTON UPDATE

Physicians can expect that the 102nd Congress will look to physician reimbursement for federal budget savings, particularly if there is a significant downturn in the economy, according to the AMA. The AMA will try to hold the line on any further cuts in Medicare reimbursement to physicians, guarding against attempts to tamper with the resource-based relative value scales and promoting the AMA's version of the Medicare volume performance standard update to ensure that physicians are compensated fairly.

Congress is also expected to revisit quality of care and physician discipline issues, and Rep. Fortney "Pete" Stark (D, CA.) is likely to mount a campaign for passage of a physician certification proposal he introduced last year. The AMA will also be monitoring developments in other important areas, such as clinical laboratory regulations, funding for AIDS legislation, restrictions on fetal tissue research and legislation protecting animal research.

PRO UPDATE

Carolina Medical Review will perform utilization review of all hospitalized Medicare patients admitted on or after February 1, 1991, for "medical back problems" (DRG 243).

FROM THE SCMA OFFICE OF LEGAL AFFAIRS

Physicians are reminded that all professional liability payments of any amount made since September 1, 1990, must be reported to the National Practitioner Data Bank (NPDB). Physicians owe it to themselves to be completely familiar with the Data Bank and its operation for its potential effect on their practice lives. Hospitals are required to periodically query the NPDB in granting and/or renewing hospital privileges. Any physician may, of course, query the bank at any time to determine what information is in his/her file.

The AMA is continuing to urge the Department of Health and Human Services to set a $30,000 minimum payment threshold before an award or payment must be reported. As the rules now stand, even a $1 payment must be reported; as a result, many physicians are now taking a very strong defensive posture on any claim against them.

NEWS FROM THE JUA

Physicians should be aware that the JUA is now providing professional liability insurance coverage for nurse midwives at a rate of 50 percent of the rate of the employing physician, for nurse practitioners at a rate of $300 annually, and for registered nurses at a rate of $60 annually. For additional information, call the SC Medical Malpractice Liability Insurance Joint Underwriting Association in Columbia at 256-6311.

SCMA YOUNG PHYSICIANS SECTION

Drs. Stephen Hulecki and Gerald Harmon represented the SCMA/YPS at the AMA Young Physicians Section meeting in December, 1990. If you are interested in receiving a copy of their report on this meeting, please contact Julia Brennan at the SCMA.

143RD SCMA ANNUAL MEETING AND SCIENTIFIC ASSEMBLY

By the time this newsletter reaches you, you should have received a packet of information from the SCMA regarding the 1991 Annual Meeting and Scientific Assembly, to be held April 24-28 at the Omni Hotel in Charleston.

A wide range of activities will be taking place beginning on Wednesday and concluding when the House of Delegates adjourns on Sunday. Up to 19 hours of AMA Category I CME credits will be available for those attending the scientific sessions.

We encourage you to preregister for the meeting and to make your hotel reservations early. Once again, there is no registration fee for SCMA members.

UPCOMING CONFERENCES

The SC Workers' Compensation Commission, in cooperation with the SCMA, is holding its 12th Annual Medical Seminar at Myrtle Beach, April 12-14, 1991. Reservations should be made directly with the Myrtle Beach Hilton (449-5000 or 1-800-445-8667) prior to March

12. The registration fee is $145, which includes a reception Friday and Saturday nights and breakfast Saturday and Sunday mornings. There will also be an additional charge of $35.00 for any guest attending any of the functions. For further information, contact Mr. William P. Rodgers, Director, Division of Medical Services, SC Workers' Compensation, PO Box 1715, Columbia 29202-1715, or call 737-5741 in Columbia.

"Dual Disorders Seminar," a one-day seminar on mental illness and substance abuse will be held March 13,. 1991 in the Forum at William S. Hall Psychiatric Institute in Columbia. The featured speaker will be the international authority on dual diagnosis, Bert Pepper, MD. The program is jointly sponsored by the Lexington/Richland Alcohol and Drug Abuse Council, the SC Department of Mental Health, Midlands Area Health Education Center and TIE. Tuition is $89 before February 28 and $110 after that date. For more information or to register, call 731-8597 in Columbia or 1-800-457-5575 outside Columbia.

PUBLICATIONS/VIDEOTAPES AVAILABLE

The AMA has introduced a newsletter to assist medical staff, insurers and others who work with current procedural terminology codes. CPT Assistant is a quarterly publication with regular features on coding issues. It is available to AMA members for $85 a year and to non-members for $135. To order, call 1-800-621-8335.

SCMA has two new videotapes available on loan: "Borderline Medicine," aired on PBS and hosted by Walter Cronkite, on the Canadian and U. S. healthcare systems; and a "48 Hours" special on AIDS and healthcare workers, with Dan Rather. To view these tapes on loan, contact Kim Fox or Joy Drennen at SCMA Headquarters in Columbia.

CAPSULES

SCMA Speaker of the House, O. Marion Burton, MD, recently accepted a position on the faculty of USC School of Medicine. In addition, he will be working with DHEC and HHSFC to improve access to pediatric care by finding retired physicians or other physicians who wish to work part-time to provide service to underserved areas. Included in his plan would be locum tenens assistance in these areas.

Congratulations to Allendale and Hampton County medical societies for achieving 100% SCMA membership for 1991.

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Contributions welcomed.
798-6207, in Columbia
1-800-327-1021, outside Columbia

IMMUNIZATION:

PUBLIC HEALTH AND PRIVATE MEDICINE: A WINNING TEAM AGAINST VACCINE PREVENTABLE CHILDHOOD DISEASES

LEWIS ANDERSON

In recent years, infections from vaccine-preventable diseases, such as diphtheria, polio and tetanus, have been virtually unheard of in South Carolina. Cases of measles, mumps, rubella, pertussis and tetanus have occurred sporadically. The rare occurrence of these diseases is a tribute to persistent and tireless efforts of South Carolina physicians and the South Carolina Department of Health and Environmental Control (DHEC) through local health department immunization clinics. However, the recent resurgence of measles across the United States and the continued low-level occurrence of pertussis, rubella and mumps remind us that providing immunizations must be a continuous activity if we expect to maintain the control we've achieved and eventually eliminate the vaccine-preventable childhood diseases.

The Division of Immunization and Prevention at DHEC and South Carolina private physicians work together in several ways to ensure that this goal is achieved. In 1990, the Division of Immunization purchased and distributed approximately 3.5 million dollars worth of Diphtheria, Tetanus and Pertussis (DTP), Diphtheria-Tetanus pediatric (DT), Tetanus-Diphtheria adult (Td), Oral Polio Vaccine (OPV), Measles-Mumps-Rubella (MMR) and Haemophilus b Conjugate (Hib) vaccines. These vaccines are made available to patients at no charge.

DHEC-supplied vaccines are also available to private physicians in South Carolina for their pediatric patients who are a part of the Early Periodic Screening, Diagnosis and Treatment Program (EPSDT) administered by Medicaid and for other patients whom physicians determine to be medically indigent. Over 200 private physicians currently utilize no-cost DHEC-supplied vaccines in their practice. As a result of this cooperative effort, vital vaccines are more readily available to needy South Carolinians.

The Division of Immunization and Prevention is charged with ensuring the enforcement of the South Carolina School Immunization Regulation that mandates certain immunization requirements for school attendance. The effort to protect the school-age population against vaccine-preventable diseases has been another cooperative effort of public health and private physicians.

Each summer, thousands of South Carolina school students go to doctors' offices or their health departments to be issued South Carolina Certificates of Immunization (DHEC Form 1125). This document is issued only if a child is completely up to date on his or her immunizations.[1] Children not completely immunized are administered appropriate vaccine and brought up to date before the certificate is issued. Each certificate must be signed by a physician. Through the joint efforts of health departments, private physicians and school officials, immunization levels in South Carolina public and private schools now annually exceed 98%.

In spite of high levels of protection, sporadic cases and occasional clusters of vaccine-preventable diseases occur. Private physicians serve as a statewide surveillance network which provides an early warning system for detecting the occurrence of these diseases. Physicians are *required* to report cases of communicable diseases to DHEC. Prompt reporting by primary care physicians is vital to the outbreak control efforts by DHEC which are aimed at preventing further spread of the identified communicable diseases. When notified of a case of measles, rubella, pertussis, diphtheria, polio or tetanus, DHEC staff working with the diagnosing physician will begin epidemiological investigation aimed at identifying other cases and immunizing or otherwise protecting exposed persons. These activities prevent potential further spread in susceptible populations. The key to success in epidemiologic investigation and outbreak control is the rapid reporting of suspected cases of vaccine-preventable disease by the private physician. Other activities of the Division of Immunization and Prevention which should be of interest to private physicians are:

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[1] Minimum immunization requirements for school attendance are three doses DTP, DT or Td—at least one dose required after 4th birthday; three doses OPV—at least one dose required after 4th birthday; one dose measles vaccine administered after 1st birthday (usually administered as MMR); one dose rubella vaccine administered after 1st birthday (usually administered as MMR vaccine).

(a) The division is responsible for the purchase, storage and distribution of rabies vaccine and rabies immune globulin utilized by physicians throughout the state to protect persons exposed to rabid or potentially rabid animals. In 1989, the division distributed over $120,000 worth of rabies vaccine and rabies immune globulin. This is provided at no expense to physician or patient.

(b) The division is gradually expanding its activities in the area of perinatal hepatitis. For several years DHEC has provided hepatitis B vaccine and hepatitis B immune globulin for infants born to mothers with hepatitis B. Efforts are now under way to identify, evaluate and immunize as necessary other household contacts of hepatitis B-infected mothers. Funding is not currently available for DHEC to provide prophylaxis to contacts of other persons with hepatitis B.

(c) Each fall the division purchases and distributes a limited supply of influenza vaccine to be administered in DHEC clinics to those citizens at high-risk of complications from influenza disease. Influenza vaccine is not currently distributed to private physicians, but doctors may refer their high-risk patients to health department influenza immunization clinics as long as vaccine supplies last.

(d) The division prints and distributes to all public health departments and to all interested private physicians a standardized Personal Immunization Record (DHEC Form 1128). In 1989, over 150,000 personal immunization records were distributed. An informational immunization pamphlet is available to all hospitals with obstetrical services for distribution to new mothers.

(e) Immunization Division staff work closely with colleges and universities throughout the state to promote, encourage and assist the schools in requiring measles/rubella immunity as a condition for attendance.

The history of childhood immunization activities in South Carolina is one of great success; however, many challenges remain. One of the foremost is to raise the immunization levels of the state's preschool age population to an acceptable level. Current estimates are that only 60-65% of children 0-4 years of age seen in DHEC clinics are appropriately immunized for their age. Such a situation leaves large numbers of children vulnerable to vaccine-preventable childhood diseases at a critical time in their lives.

Meeting challenges, as well as maintaining hard earned achievements, will be accomplished by the continued strong partnership between public health and private medicine. ☐

DISEASE REPORTING IN SOUTH CAROLINA

JEFFREY L. JONES, M.D., M.P.H.
STEPHEN LUBY, M.D.
WILLIAM B. GAMBLE, JR., M.D., M.P.H.

INTRODUCTION

Disease reporting is an essential method for society to monitor disease trends. It is not possible to prioritize disease research, medical training or public health prevention programs without knowledge of disease incidence. In addition, disease reporting is essential to monitor the effectiveness of public health programs. Such programs may involve the administration of a vaccine, engineering measures to drain swamps to reduce mosquito-borne illness, or health education directed at behavior change to impact a disease such as AIDS. Finally, reporting helps insure that public health agencies can take immediate action when serious illnesses such as botulism occur.

LAWS AND REGULATIONS REGARDING REPORTING

Systematic reporting of diseases in the United States began in 1874 when the Massachusetts State Board of Health inaugurated a plan of weekly reporting of prevalent diseases by physicians. In South Carolina, legislation concerning disease reporting was passed by the General Assembly in 1900. By 1925, all states were participating in a national morbidity reporting system. The following excerpt is taken from the current South Carolina Code of Laws and illustrates the legal requirement for disease reporting in the state.

Section 44-29-10 states that "In all cases of known or suspected contagious or infectious diseases occurring within this State the attending physician shall report such diseases to the county health department within twenty-four hours, stating the name and address of the patient and the nature of the disease. . . . The Department of Health and Environmental Control shall designate the diseases it considers contagious and infectious. The Department of Health and Environmental Control may also designate other diseases for mandatory reporting by physicians."

With input from the Bureau of Laboratories, the South Carolina Department of Health and Environmental Control (DHEC) Bureau of Preventive Health Services prepares the reportable disease list every October for the following year and publishes it in the "Epi Notes" newsletter (see Table 1).

CLASSES OF REPORTING

The department reportable disease list requests two general classes of reporting (see Table 1). Class I requires an immediate telephone report, and Class II requires prompt report by telephone or card. Class I diseases are those with potential for rapid epidemic spread or those which may require immediate health department action to prevent further cases. Class II diseases are those for which surveillance and/or prevention are important, but not as urgent as for Class I. Some of the diseases listed in Class II are reportable by number of cases only (IIB), or laboratory only (IIC). For a number of diseases, the department may request additional information with supplemental surveillance forms. The forms assist in determining whether or not the illness truly meets the case definition, determining risks for the disease, and determining the potential for a public health related mode of transmission.

LIMITATIONS OF REPORTING

Disease reporting can place a large burden on physicians and their staff. In a few special circumstances, such as with AIDS and rubeola, the health department has "active surveillance" staff to contact medical personnel about cases and assist in filling out forms. However, even with under-reporting, trends in diseases can be followed from year to year, unless something such as news media coverage makes the public and physicians much more aware of a disease and therefore much more likely to report. As an example, the news media has shown intense interest during the past two years in Lyme disease.

TABLE 1

LIST OF REPORTABLE CONDITIONS BY TYPE OF REPORTING REQUIRED

Class I: Immediate Telephone Report Required

Report cases to the County Health Department. Conditions with potential epidemic spread or which require rapid action.

- Animal bites
- Anthrax
- Botulism
- Cholera
- Dengue
- Diphtheria
- Foodborne outbreaks (R)
- Haemophilus influenza disease
- Meningococcal disease (R)
- Pertussis (R)
- Plague
- Poliomyelitis
- Rabies (human)
- Rubeola
- Smallpox
- Trichinosis (R)
- Typhoid fever
- Yellow fever

Class II: A. Prompt Report Required by Telephone or Card

- AIDS (R)
- Blastomycosis
- Brucellosis (R)
- Chancroid
- Coccidioidomycosis
- Cryptococcosis
- Ehrlichiosis
- Encephalitis, Arthropod-borne (R)
- Gonorrhea
- Granuloma inguinale
- Hepatitis (A, B, C, Non-A/Non B, Delta, unspecified) (R)
- Herpes simplex, genital
- Histoplasmosis
- HIV infection
- Kawasaki disease (R)
- Lead poisoning
- Legionellosis (R)
- Leprosy
- Leptospirosis
- Listeriosis
- Lyme disease (R)
- Lymphogranuloma venereum
- Malaria (R)
- Pelvic inflammatory disease
- Pneumocystis carinii
- Psittacosis
- Reye syndrome (R)
- Rocky Mountain spotted fever (R)
- Rubella
- Rubella, congenital syndrome (R)
- Sporotrichosis
- Syphilis
- Syphilis, congenital (R)
- Tetanus (R)
- Toxic shock syndrome (R)
- Tuberculosis
- Tularemia
- Typhus

B. Report required by number of cases only

Report cases to the County Health Department

- Aseptic meningitis
- Influenza
- Mumps
- Varicella or herpes zoster

C. Report required from laboratories only

- Campylobacter
- Chlamydia infection
- Salmonellosis
- Shigellosis
- Vibrio vulnificus, parahaemolyticus

(R)=DHEC requests follow-up information on this disease. A case report will be mailed for completion.

In some circumstances, such as during the investigation of an outbreak or when it is important to have reporting as complete as possible, DHEC undertakes special surveillance projects. The projects may require review of hospital records, laboratory reports, and pathology reports, or require telephone calls to physicians and/or patients. Much of the initial surveillance for the outbreak of Eosinophilia/Myalgia Syndrome (EMS) in 1990 was done with personal calls to physicians and/or patients. Cases of illness may also be identified by the health department through contact interviews for such diseases as tuberculosis, syphilis, hepatitis and measles.

USE OF CASE REPORT INFORMATION

The number of cases reported for each disease is published monthly in the DHEC "Epi Notes" newsletter. Additional disease report information is available by time, place and person variables upon request.

DHEC uses case report information to recommend and/or provide preventive measures. The following are examples of preventive measures implemented in response to disease reports: prophylactic therapy for persons who are household contacts of *Haemophilus influenzae* type b meningitis; inspection and investigation of a day care center with multiple cases of shigella; investigation of a restaurant where cases of hepatitis A were reported from a patron or food service worker; treatment and contact investigation of syphilis cases; and skin testing of contacts of tuberculosis cases.

CONCLUSION

Disease reporting is essential for society to monitor disease trends, establish prevention programs, and to prevent outbreaks of disease. Timely reporting helps DHEC personnel take the necessary public health action.

For additional information and to share your ideas and comments, please contact Jeffrey Jones, M.D., DHEC, Disease Control, 2600 Bull St., Columbia, S. C., 29201 or phone (803) 737-4165. ☐

TUBERCULOSIS TODAY IN SOUTH CAROLINA:

A PARTNERSHIP BETWEEN DHEC AND LOCAL PHYSICIANS

CAROL J. POZSIK, R.N., M.P.H.

When the doors of the last operational tuberculosis (TB) sanitorium were closed in South Carolina in 1983, the general public mistakenly assumed that the disease no longer existed. This is far from the case, as the number of persons in South Carolina currently at risk will testify.

Today, a reservoir of about 200,000 persons infected with *M. tuberculosis* in our state share a lifelong risk of developing clinical disease. About 900 persons are reported as the suspected tuberculosis cases each year to DHEC's TB Control Division. Of these, about 500 are eventually determined to have the disease.

The goals of the division are to:

(1) find persons who have disease and treat them,
(2) find newly infected persons and prevent them from progressing to disease, and
(3) keep the uninfected from becoming infected.

PARTNERSHIP WITH SOUTH CAROLINA PHYSICIANS

One of the most positive aspects of South Carolina's TB program is its relationship with the state's physicians. This program is not just a DHEC program. The cooperative efforts of many physicians working with their local health departments are required. With few exceptions, local health department chest clinics and the TB Regional Hospital Program are staffed by specialists from the community.

Traditionally, about 92% of the cases are treated in the county health department. For two percent, private physicians who are knowledgeable in the treatment of tuberculosis maintain primary responsibility for the patient's care. They are assisted by DHEC in administering drugs, monitoring compliance, taking chest x-rays, administering tuberculin skin tests, obtaining sputum specimens and providing laboratory testing and monthly monitoring for drug side effects.

IMPORTANT POINTS TO KNOW ABOUT THE TB CONTROL PROGRAM

Program Standards, Staff and Consultation
The American Thoracic Society (ATS) and the Centers For Disease Control (CDC) provide the program standards for treatment and control to state programs. DHEC's TB Control Division has experienced, qualified staff to provide consultation and continuing education programs to physicians and other health care workers. The division's medical consultants are active members of the American and South Carolina Thoracic Societies and maintain frequent contact with the CDC.

Important State Laws Governing Tuberculosis Control
All suspected or diagnosed cases of tuberculosis must be reported to DHEC within 24 hours after the diagnosis is reasonably suspected. This requirement applies to physicians, hospitals and laboratories.

Health department personnel are authorized to review patient medical records of all private and public institutions and clinics and provide consultation about the control of tuberculosis and the care of patients.

Tuberculosis patients who do not take their medications are subject to quarantine orders and/or subsequent confinement to a secured state institution so that treatment can be pursued.

Diagnosis
Local health departments provide skin testing (Mantoux method: 5TU PPD), chest radiographs, sputum collection, history and physician evaluation at no charge to the patient.

Laboratory Services
The DHEC Bureau of Laboratories, a Level

III reference laboratory, performs primary isolation and identification of mycobacteria from clinical specimens, drug susceptibility testing and identification of referred cultures. The latest in rapid diagnostic technologies, such as the radiometric method and genetic probes, are used. Instead of the previously required six to eight weeks, most culture reports are now available in about three weeks. Reports are directed to the physician, the county health department and to the DHEC TB Control Division to ensure rapid follow-up of positive specimens. DHEC financially supports all mycobacteriology laboratory testing. Physicians and hospitals are encouraged to use these services. Supplies for the collection of specimens may be obtained by telephoning the Bureau of Laboratories in Columbia at 935-7063.

Contact Investigation

Newly infected contacts to tuberculosis cases are among those at highest risk for developing active tuberculosis. DHEC personnel spend considerable time in the community performing contact investigations and examinations. TB skin tests, chest radiographs and preventive therapy are administered to contacts according to ATS/CDC recommendations. The patient's physician should understand the importance of this activity in order to explain the purpose to the patient. Failure to investigate each case rapidly can cause considerable delays in finding newly infected contacts and, in some instances, new cases of tuberculosis in children and adults.

Hospitalization

DHEC supports a hospitalization program for certain TB patients and suspects in designated regional hospitals. In each hospital, a regional medical consultant manages the care of these patients. Admission is by prior authorization of the regional consultant. If the patient has limited funds, funding is available through DHEC.

Tuberculosis Regional Hospital Programs and Medical Consultants

- Aiken Regional Medical Center
  - Jack Ratliff, M.D.
- Anderson Memorial Hospital
  - John B. Martin, M.D.
- Greenville Memorial Hospital
  - Lloyd Hayes, M.D.
- McLeod Regional Hospital (Florence)
  - Mark Barnard, M.D.
- Medical University of S. C.
  - Steven Sahn, M.D.
- Piedmont Medical Center (Rock Hill)
  - C. Edward Creagh, M.D.
- Richland Memorial Hospital (Columbia)
  - Charles Bryan, M.D.
- Spartanburg General Hospital
  - Wilson Smith, M.D.
- Tuomey Hospital (Sumter)
  - Charles White, M.D.

Central Tuberculosis Register

Since 1940, DHEC has maintained a central register of all persons who have had tuberculosis in South Carolina.

Abstracted information concerning diagnosis, treatment and hospitalization on individual patients is available to medical providers upon request.

Medical Management

Each county health department has a tuberculosis control program. All services to patients (suspect and active cases, contacts and preventive therapy patients) are provided free and include physician and nurse management, chest radiographs, diagnostic tests and medications. In some communities, medications are administered directly to the patient by the nurse on a twice weekly basis.

SUMMARY

The DHEC TB Control Division staff in both the central office in Columbia, and in local county health departments are in place to provide the best services for diagnosis, treatment, prevention and control of the disease.

Physicians are encouraged to contact either unit to report suspected cases and/or receive consultation. In the future, the partnership to maintain effective tuberculosis control in South Carolina will depend upon the continuing cooperation of local physicians and DHEC.

For additional information and to share your ideas and comments, contact the author. □

CLEAN AIR ACT AMENDMENTS OF 1990

M. K. BATAVIA, P.E.

Respiratory disease is a significant health problem in the United States, which is clearly aggravated by or caused by inhaling polluted air. To ameliorate this problem, President George Bush signed into law the Clean Air Act Amendments of 1990 on November 15, 1990, thus breaking a 13-year congressional deadlock on clean air.

The 1990 amendments represent the most comprehensive and, possibly, the most expensive piece of environmental legislation ever adopted. It is massive both in scope and bulk. The Clean Air Act of 1970 contained 41 pages, the 1977 amendments increased its size to almost 200 pages and the 1990 amendments expand it to almost 800 pages. These 800 pages, among other things, require the U. S. Environmental Protection Agency (EPA) to issue 27 major rules during the first year and 50 within three years. These rules will, of course, lead to revisions and additions to South Carolina's air pollution control regulations and standards. Many authorities believe that Congress has presented EPA with unrealistic deadlines and insurmountable short-term goals. On the positive side, the amendments are designed to:

- —cut urban smog and other air pollutants, allowing 130 million people in 100 major metropolitan areas to breathe healthier air;
- —cut acid rain emissions in half;
- —lower air toxic emissions by 95%;
- —improve visibility and remove haze;
- —reduce greenhouse gas emissions; and,
- —phase out harmful ozone-depleting chlorofluorocarbons (CFCs).

The following is a brief summary of the highlights and potential impacts of the amendments. Both facts and speculation are included, as a complete copy of the amendments was not available at this writing. Also, in some cases, Congress has given EPA considerable latitude in the development of the future rules required by the amendments.

TITLE I

This title addresses "nonattainment areas" or areas where one or more National Ambient Air Quality Standards are not being met. The Act specifies, for the first time, that these nonattainment areas must be defined on a Metropolitan Statistical Area (MSA) basis, rather than on a county or sub-county basis as in the past.

The impact on South Carolina results from the fact that since 1988 the ozone standards are not being met in South Carolina's portion of the Charlotte MSA (York County, SC) nor in the Greenville-Spartanburg MSA.

Ozone formation results primarily from industrial and motor vehicle emission of hydrocarbons (or volatile organic compounds). Over the past 10 years, the industrial sources of volatile organic compounds (VOCs) have been well-regulated in South Carolina. However, motor vehicles are not presently regulated at the state level.

For the present, existing industrial sources in the impacted areas will see little change. However, there will be a significant impact on new or modified sources of VOCs in that future increases in VOC emissions will have to be "offset" by reductions in existing emissions.

The amendments require a motor vehicle inspection program in the Charlotte MSA and possibly in the Greenville-Spartanburg MSA. A statewide motor vehicle inspection program, while not a requirement of the Act, offers many benefits. In our mobile society, travel is certainly not constrained by county boundaries. Ozone pollution travels across state and county lines and some metropolitan areas are only marginally attaining the ozone standard. Reductions in motor vehicle emissions could provide emissions offsets for future industrial growth. The health and welfare benefits of a statewide reduction in motor vehicle emissions can be significant.

TITLE II

This title applies to new motor vehicles and addresses more stringent emissions standards, additional emission controls, testing and certification, warranties, fuel standards and nonroad vehicles. The impact is on motor vehicle manufacturers and fuel refiners and EPA is responsible for implementation.

TITLE III

Information generated from the Superfund "Right to Know" rule (SARA 313) indicates that more than 2.7 billion pounds of toxic air pollutants are emitted annually in the United States. This title addresses control of these emissions. Congress has identified 189 of these pollutants for regulation. EPA must develop standards over the next 10 years: 41 compounds must be regulated within two years, 25% within four years, 50% within seven years and 100% within 10 years.

The new standards will be "technology based," in that existing sources must install Maximum Achievable Control Technology (MACT). MACT must be at least as stringent as the controls achieved in practice by the best controlled sources in the same category.

Existing sources must comply with MACT within three years of promulgation. Extensions are available in some cases and there are incentives for early compliance.

EPA must establish regulations calling for detection and control of accidental releases. Owners/operators of industrial facilities that handle extremely hazardous substances must prepare risk management plans to identify and prevent potential accidental releases. Further, the Act establishes a Chemical Safety Board to investigate accidents and establish reporting and other regulations.

TITLE IV

A two-phase emission reduction program is established to reduce sulfur dioxide emissions by 10 million tons (50% of the 1980 emissions) . In phase I, by 1995, public utility power plants must reduce their emissions to a level equal to 2.5 pounds per million Btu (lbs/mm Btu) times an average of their 1985-1987 fuel use. South Carolina utilities are not impacted by phase I.

In the second phase, effective January 1, 2000, approximately 2,000 utilities must reduce their sulfur dioxide emissions to a level equivalent to the product of an emissions rate of 1.2 lbs/mmBtu times an average of their 1985-87 fuel use. Beyond additional control requirements, the most significant impact of this title will be the restrictions it places on the future growth of South Carolina utilities. However, the positive health and welfare impacts will be a reduction in acid rain in South Carolina that results primarily from out-of-state utility emissions.

TITLE V

This title, for the first time, establishes a federal operating permit program. While South Carolina and the majority of the other states have had an operating permit program for years, EPA will now have new power to veto state permits. Further, the Act now provides an avenue for citizens to appeal the issuance of operating permits.

Additionally, for the first time, the Act requires the state to charge permit fees. The fees must cover the direct and indirect costs of operating the permit program and the fees must be retained and utilized solely by the state air pollution control program. A minimum fee of $25 per ton of regulated pollutant is mandated.

To ease the impact on small businesses, fees may be reduced. Further, the Act requires each state to adopt, within 24 months, a small business stationary source technical and environmental compliance assistance program. The necessity and appropriateness of control requirements for small sources is also addressed.

TITLE VI

A national program to phase out chlorofluorocarbons (CFCs) and halons contributing to the depletion of stratospheric ozone is addressed in this title.

EPA must promulgate standards for the use and disposal of these compounds during the service, repair or disposal of appliances and industrial process refrigeration by July 1992. Recycling of refrigerants from motor vehicle air conditioners is required by 1992.

TITLE VII

This title increases enforcement penalties under the Act and emphasizes criminal penalties where appropriate. The term "operator" now includes senior management personnel or a corporate officer. Except in cases of "knowing and willful violations," the term does not include engineers or technicians charged with operating, maintaining, repairing or monitoring equipment or facilities. Further, criminal penalties for knowing violations are upgraded from misdemeanors to felonies.

OTHER TITLES

The Act continues the federal acid rain research program and contains several new provisions relating to research, development, air pollution control grants and air monitoring. It also contains provisions to provide additional unemployment benefits through the Job Training Partnership Act to workers laid off as a consequence of compliance with the Act. There are also provisions to improve visibility near National Parks and other parts of the country.

For more information, please contact the Bureau of Air Quality Control at (803) 734-4750. □

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THE PUBLIC HEALTH LABORATORY

HAROLD DOWDA, PH.D.

In 1989, the Bureau of Laboratories marked its 80th year of service to the citizens of South Carolina. Although the first state laboratory opened on July 1, 1909, the idea of creating a state laboratory emerged more than ten years earlier, in 1898. At that time, the South Carolina State Board of Health submitted a request to the state legislature for a bacteriology laboratory so that all physicians in the state could have diagnostic services available to them. Their request expressed two vital needs: (1) to verify the true causes of disease as most essential to South Carolina physicians, and (2) to provide a knowledge base which the State Board of Health could use in determining those conditions occurring in the state and which required control measures.

The original request suggested the establishment of a bacteriology laboratory "... where the sputa of consumption, the excretions of the throat in diphtheria, blood in typhoid fever, polluted water and contaminated milk and food might be examined and the exact nature of the disease positively given so that the physician and sanitarian could be relieved of doubt and take precautions to prevent the spread of disease." During that first year, examinations for tuberculosis, typhoid, intestinal and blood parasites, venereal disease, diphtheria and pollution of the water supply were made. All of these diseases and environmental conditions are still the same diseases and conditions which are monitored today.

The state laboratory was created to work in conjunction with the Rabies Vaccination Unit, providing free immunization for those exposed to rabies. At the time, South Carolina was one of only 11 states providing this service free of charge, an early example of the commitment to being in the forefront of efficient and effective public health that is still so much a part of DHEC's commitment.

The Bureau of Laboratories was first housed in a temporary location in the Harper College building, the "old Science Hall" at the University of South Carolina, and in a variety of facilities over the next 70 years. In 1979, the state laboratory moved into its present location in the James A. Hayne Building, a facility constructed specifically for the performance of public health testing. The building is equipped with sophisticated air handling and environmental control systems which provide a safe work environment for individuals manipulating pathogenic organisms and toxic chemical compounds. When the Hayne Building was first occupied in 1979, it was thought that the building would accommodate the needs of the public health laboratory for a generation to come. But, as is often the case, fate intervened in the form of AIDS, drugs of abuse, asbestos, pollution and new parasitic diseases, as well as in the resurgence of the old enemies of public health — syphilis, gonorrhea and shigellosis. As a result, the facility is now greatly overburdened.

Currently, the Bureau of Laboratories is considered among the foremost public health laboratories in the United States. Over 700,000 tests on more than a half million specimens are performed each year. Tests for diseases of particular importance to the public health are made available to all medical practitioners in South Carolina. Such procedures include testing for sexually transmitted diseases, infection by the human immunodeficiency virus (HIV1), cultures for acid-fast bacteria, detection of drugs of abuse, screening for metabolic disorders, the detection of asbestos particles and the detection of pathogens in the environment such as *Cryptococcus neoformans* and *Histoplasma capsulatum*. Reference services are provided to hospitals and clinics whereby unusual isolates can be identified, or etiologies confirmed, or the involvement of toxic chemicals or substances in a disease process can be identified. The Bureau of Laboratories provides services to support the activities of DHEC programs delivered through the county health departments.

In addition to providing testing services, the Bureau of Laboratories has a long tradition of disseminating technical information to laboratorians and physicians in South Carolina. Each month, the bureau produces a newsletter on a topic currently receiving the attention of the health care community. Anyone in the state with an interest in receiving this publication may do so by asking that their name be added to the mailing list.

Through its Division of Clinical Laboratories, the bureau provides high quality, continuing education opportunities for health care workers in South Carolina. These take the form of lectures and workshops dealing with emerging technologies and areas of newly acquired knowledge. These offerings are presented by knowledgeable, competent individuals. Anyone in the state wishing to attend a workshop may do so, and information about upcoming events may be obtained by contacting the Division of Clinical Laboratories.

Traditionally, state laboratories have been associated with infectious diseases of public health importance and, more recently, with pollution of the environment; but, the Division of Analytical Chemistry is, in addition, deeply involved in providing screening for metabolic diseases and hemoglobinopathies. Virtually every child born in South Carolina is tested for these conditions in the Bureau of Laboratories. The test makes use of a blood-soaked filter paper disk which is used for metabolic screening. It may also be of value in identifying other conditions of the newborn.

The epidemic of drug abuse is a cause of major concern to public health officials. For years, the Bureau of Laboratories has offered testing for drugs of abuse. In the last five years, the number of samples received has increased dramatically as has the sophistication of the analyses required for their detection and identification. The Division of Analytical Chemistry offers drug testing to any physician in South Carolina and utilizes both screening, presumptive identification techniques, and where indicated, confirmation by mass spectroscopy.

In addition to performing routine diagnostic testing, the laboratory has responded to several emergencies and was called upon in the investigation into whether cyanide was present in Tylenol in South Carolina. Its resources were also sought in dealing with outbreaks of pesticide poisoning and of stuffed chicks contaminated with arsenic.

Intermittently, during its history, the bureau has offered pathology services in support of DHEC programs. Recently, the Division of Clinical Pathology has been re-instituted and will provide exfoliative cytology for DHEC clinic patients.

The Division of Diagnostic Microbiology contains most of the activities traditionally associated with public health laboratories. This division provides diagnostic services for sexually transmitted diseases, mycobacterioses, enteric infections, environmental mycology and immunodiagnosis. In addition to providing the classic techniques for reference laboratory identification, the division makes extensive use of automation and modern analytic technology.

Diagnostic Microbiology provides rabies testing 365 days a year and performs epidemiologic investigations, such as an outbreak of toxoplasmosis in individuals eating under-cooked venison, or shigellosis outbreaks in restaurants and day care centers. This division also supports the efforts of the Bureau of Preventive Health Services in their disease control efforts.

Practical applied research has always been a part of the South Carolina State Laboratory. Recently, these activities have resulted in the development of rapid methods for the detection and identification of pathogenic fungal infections, the elucidation of the etiology of new fungal species in human infections, defining the extent of HIV spread in the heterosexual population, determination of the rate of the resistant gonorrhea infections, and the prevalence and risk factors associated with infection by *Chlamydia trachomatis* in South Carolina women. These activities will continue to be an important part of the service provided by the Bureau of Laboratories to the citizens of South Carolina.

Virtually every test procedure performed is available to private physicians in South Carolina. Physicians are encouraged to utilize their local laboratories whenever possible for routine testing, but in unusual situations, the services of the Bureau of Laboratories are available. In some cases, when the result has little public health significance, a fee is charged, but no test is ever denied to a patient because of an inability to pay. Physicians submitting specimens from indigent patients may indicate on the laboratory invoice that the patient is indigent and no charge should be made. No citizen of South Carolina should ever go without a needed analytical procedure offered by the Bureau of Laboratories because he or she cannot pay a laboratory fee.

The services of the Bureau of Laboratories are summarized in a frequently updated publication called *Services of the Bureau of Laboratories*. This publication lists all the tests offered by the Bureau of Laboratories, proper collection and submission procedures, and general information about the interpretation of the test. These manuals and a supply of request forms can be obtained by calling 935-7063 in Columbia.

For more information, call Sarah J. Robinson, M.A., Deputy Chief, Bureau of Laboratories, 935-4042 in Columbia. □

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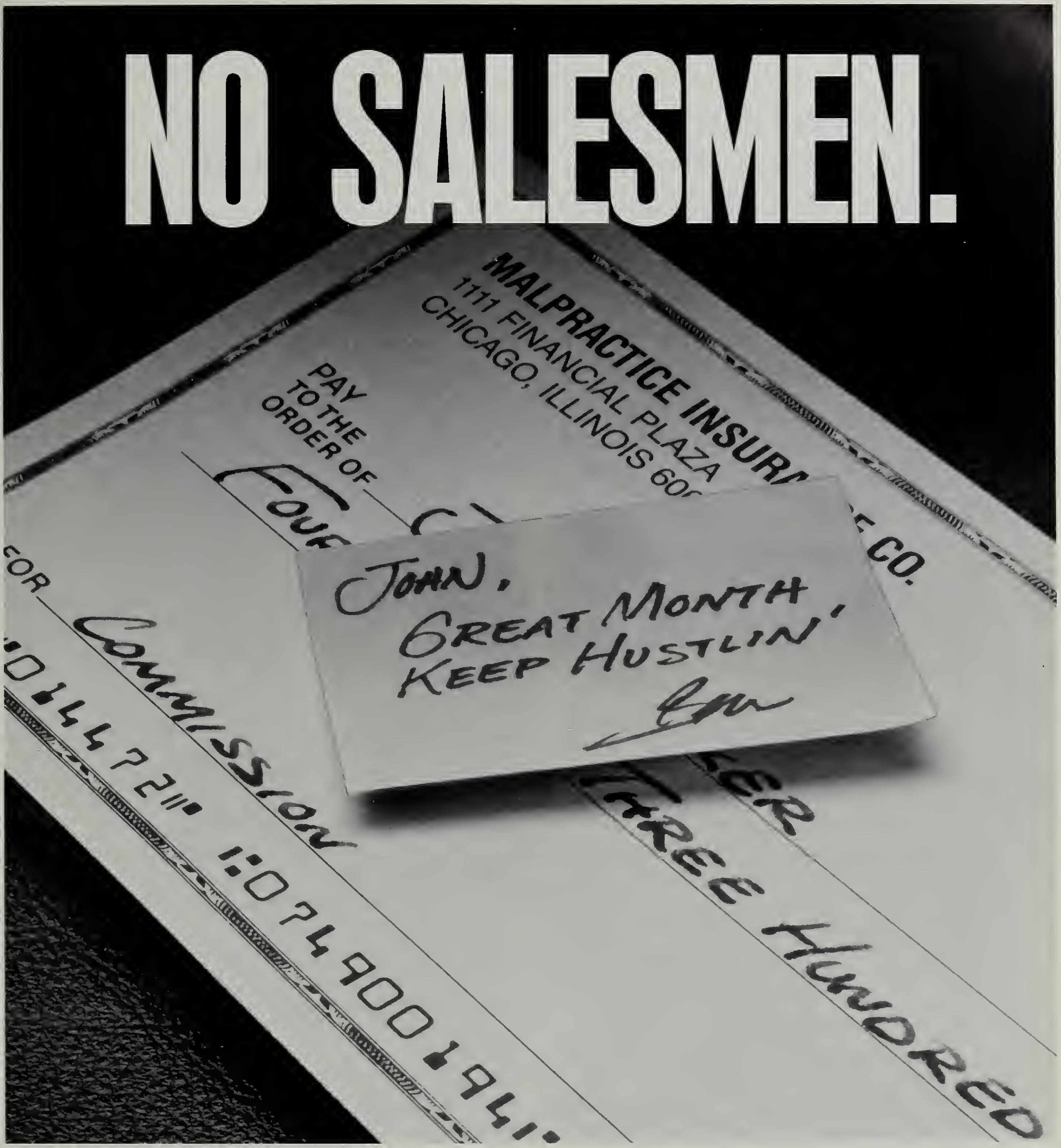

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PARTNERSHIP FOR A HEALTHIER TOMORROW: PUBLIC HEALTH AND THE MEDICAL COMMUNITY

J. CARROLL CHAMBERS, M.D., M.P.H.

On the evening of December 24, 1787, a group of Charleston physicians met for the purpose of forming the Medical Society of South Carolina, not to be confused with the South Carolina Medical Association. Since this was prior to the official public health movement in this country, this group of physicians assumed responsibility for responding to the community health needs of its day, including quarantine, the assurance of adequate sewage disposal and a safe water supply. It served as the Board of Health for the City of Charleston until one was established in 1808.

The interests and activities of these early physicians have been mirrored over and over again by their successors throughout history. With the organization of official public health agencies based on state statutes and/or local ordinances, a true partnership began to evolve between these agencies and the private practitioners of medicine. Although the primary area of interest differs between public health and private medicine, prevention versus therapeutics, it must be recognized that each is needed by the other to fulfill its mission.

Among the important responsibilities of public health at any level is maintaining an effective system of reporting the occurrence of both diseases and vital events, i.e. births and deaths. This allows for the appropriate distribution of scarce resources and, in some cases, the prediction of patterns of disease. Without the cooperation of the private practitioners, this system would not function efficiently. Reporting of certain communicable diseases is also essential to the initiation of investigative processes designed to directly protect the public's health.

It is a widely accepted fact that some of the most successful life-saving activities originate from public health. Among these is the process of immunization. The incidence of vaccine-preventable diseases has decreased dramatically in the past two decades. Official public health agencies and private practitioners have traditionally combined their efforts to assure a high level of vaccine protection among all residents. During the community-wide poliomyelitis, measles and influenza campaigns of the past 25 years, true partnerships were formed between public health and the private sector. Adequate community protection against vaccine preventable diseases could never be achieved by public health agencies alone. It has taken a coalition of public health, private medicine and federally funded clinics to accomplish the task.

Maternal and child health programs have always been viewed as the cornerstones of the public health effort. These include prenatal care, postnatal follow-up, family planning and a variety of services for infants and young children. Probably no other service area has created a stronger partnership than this. Because of advancing technology and increasing patient load demand, local health departments have, of necessity, turned to private practitioners for assistance. This has been particularly true in rural areas where health care resources are relatively limited. A variety of reciprocal partnerships have been developed to address the needs of the public. These have included, but have not been limited to, private practitioners providing care for patients in local health department clinics or providing care on referral from health departments in their own offices.

Two programs which were originated by federal funding in recent years have formalized the partnership process. The first of these is the Early Periodic, Screening, Diagnosis and Treatment (EPSDT) Program which pays for services for Medicaid eligible clients through 21 years of age. The concept was designed to encourage early entry into the health care system by persons not always highly motivated to seek preventive services. The private sector has participated by providing some of the screening directly, as well as by accepting referrals for follow-up from local health departments. The second program is the Women, Infant and Children's (WIC) Supplemental Feeding Program which provides nutritious food to eligible women, infants and children through a voucher system. Many physicians participate by referring their patients to local health departments for this service.

Two other programs of traditional public health importance are the management of tuberculosis and sexually transmitted diseases. In both of these program areas, much reliance is placed on the partnership between private practitioner and public health. The physician in practice is responsible for reporting all cases of tuberculosis and sexually transmitted disease. This allows for the institution of the intervention process designed to protect others from disease.

The referral process with any of these diseases may go either way. Quite often, the physician who initially sees the patient may prefer that the health department manage the entire case. On the other hand, a health department with very limited medical resources may refer complicated cases to a practitioner for management.

The communities of today depend upon the continuation of the partnership between health departments and the private medical sector which has been strengthened over time. The provision of health care is complex and the expectations are high. Thus, it is only by sharing responsibilities that the expectations of the public for a healthier tomorrow can be met.

For more information, contact J. Carroll Chambers, M.D., M.P.H., Trident Health District, 334 Calhoun Street, Charleston, SC 29401.

PHYSICIAN RECOGNITION AWARDS

The following SCMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned.

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Gary A. Delaney, M.D.
Jonathan L. Dieter, M.D.
Alexander G. Donald, M.D.
Everett P. Fuller, M.D.
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Harold R. Rubel, M.D.
Bruce M. Schlein, M.D.
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HIGH RISK MATERNITY

CAROLE GIBBS, M.P.H.

In a continuing effort to combat South Carolina's persistently high infant mortality problem, the South Carolina Department of Health and Environmental Control (DHEC) has sought cooperation and advice from physicians in private practice. DHEC has funded special services for women at high risk for medical complications during pregnancy through state appropriations and federal funding resources. Over time, more and more perinatal services have been reimbursed through the state Medicaid Program.

One of the most effective services recently has been the High Risk Channeling Project (HRCP) initiated in 1986, by the South Carolina Health and Human Services Finance Commission (SCHHSFC) through a cooperative agreement with DHEC. Federal regulations regarding "freedom of choice" for Medicaid recipients were waived so that pregnant women and infants identified as high risk can be channeled to Level II and III hospital specialty physicians and high risk clinics during the perinatal period. With the expansion of Medicaid eligibility up to 185% of the federal poverty level for pregnant women and infants, the HRCP is now the mechanism through which most high risk pregnant women are served. About 40% of the pregnant women in South Carolina are estimated to be income eligible for Medicaid reimbursable services for pregnant women and infants.

Medical risks of pregnant Medicaid recipients and newborn infants of Medicaid recipients are recorded on a risk assessment form (SHHSFC #204, *Pregnancy/Newborn Risk Assessment Form*). If high risk factors are marked on the form, the patient is to receive specialized services and is entered into a case management system through the HRCP. A copy of the risk assessment form is sent to the county health department to initiate case management, and another copy is sent to the SCHHSFC for Medicaid reimbursement.

Medicaid reimbursable services through the HRCP include:

- prenatal medical care provided by an obstetrician,
- delivery in a Level II or Level III hospital,
- social work assessment and treatment,
- nutrition assessment and treatment,
- prescribed medical/clinical encounters for infants, and
- nursing management of the prenatal plan of care with case management through pregnancy and for one year after delivery.

After four years, an evaluation of the project demonstrated the following benefits: Since its implementation in 1986, the SCHHSFC has reimbursed over 46,000 risk assessments for pregnant women; almost 16% were high risk. Over 32,500 risk assessments for infants have been reimbursed; over eight percent have been high risk. During this time, nearly 6,900 high risk pregnant women and about 3,900 infants have been served by the project.

Overall, the system for delivering perinatal services for high risk mothers and infants is changing positively, as evidenced by several related health indicators.

- More high risk deliveries are occurring in Level II and Level III hospitals.
- The proportion of very low birthweight infants that are delivered in Level III hospitals has increased from 73.3% in 1986 to 79.4% in 1988. This trend is expected to continue.
- The demand for transportation for transfer of low birthweight and very low birthweight newborns to Level III centers has decreased, thereby lowering transportation costs.
- The mortality rate for the first month of life has continued to improve for both races, especially among infants who weighed 500-1,499 grams at birth.

The SCHHSFC is considering several changes for the HRCP in the near future. They are

- automatically including of Medicaid enrolled obstetricians as HRCP providers,

- requiring diabetic education for HRCP patients with diabetes,
- including prenatal substance use and infant drug exposure as high risk factors on the risk assessment form, and
- including detoxification services for substance abusing HRCP patients in hospital and non-hospital settings.

Both DHEC and the SCHHSFC welcome comments about the HRCP from physicians in private practice. To be effective, the HRCP needs coordination with and cooperation of private physicians in each perinatal region of the state.

For more information and to share your ideas and comments, contact Sara Balcerek, M.S.N., Director, Division of Maternal Health, S.C. Dept. of Health and Environmental Control, 2600 Bull Street, Columbia, SC 29201.

Order the Pregnancy/Newborn Assessment Form (SCHHSFC 204) from South Carolina Dept. of Social Services, Supply and Storage Section, Post Office Box 1520, Columbia, South Carolina 29202. ☐

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QUALITY HOME HEALTH CARE: THE PHYSICIAN'S ROLE

BARBARA ALEXANDER, R.N., M.S.N.
JUDITH BURNETT, R.N., B.S.N.

Coordination between physicians and home health agencies is essential to provide quality health services to patients who are homebound and require treatment for illness or injury. This process is facilitated by telephone and written communication, which is summarized on the Health Care Financing Administration (HCFA) series 485, 486, 487. Since 1985, Medicare has mandated that all home health agencies providing services to Medicare patients utilize the HCFA series as the plan of treatment. The completion of the HCFA series by home health agency personnel requires periodic review by physicians, at least every 62 days.

Since the inception of the HCFA series, The South Carolina Department of Health and Environmental Control (DHEC) Home Health Services Division has been involved in the development and implementation of a computerized system for the completion of this series. The initial goals of the computerization were to reduce duplicate writing of services being provided by health professionals and to provide legible plans of treatment for physicians' review and consideration. The medical orders on the HCFA 485 are as binding in the home as are the medical orders in the hospital. Development of the HCFA series reflects collaboration between physicians and professionals of a multidisciplinary team.

The health district Home Health Services staff is a multidisciplinary team consisting of the following disciplines and their services:

1. *Registered Nurse (R.N.)*: skilled nursing observation and assessment, foley insertion, wound care, dressings, venipuncture for laboratory values, restorative nursing (i.e. Range of Motion exercises, ambulation, transfer training, bowel and bladder training), administration of IM or IV medication, teaching procedures and signs/symptoms to report to the physician.
2. *Home Health Aide (HHA)*: personal care, exercises, tub/shower bath, catheter care, assisting with ambulation.
3. *Physical Therapist (PT)*: therapeutic exercise, transfer training, gait training and prosthetic training.
4. *Occupational Therapist (OT)*: independent living/daily living skills, muscle re-education, perceptual motor training, fine motor coordination, neuro-developmental treatment, sensory treatment, orthotics/splinting and adaptive equipment.
5. *Medical Social Services (MSS) Worker*: counseling for long range planning and decision making, community resource planning and short term psycho-social therapy.
6. *Speech Therapist (ST)*: voice disorder treatment, speech articulation disorders treatment, dysphagia treatment, language disorders treatment, aural rehabilitation and non-oral communication.
7. *Registered Dietician (RD)*: diet orders, diet instruction, meal planning and adapting of diets to existing budgets and capabilities.

Physicians who authorize the above services for their patients provide the key element (medical direction) that assists these health professionals with development, implementation and evaluation of a coordinated plan of treatment for the patient.

DEVELOPMENT

The coordination process begins when patients are referred to the Home Health Services program. Most referrals are initiated via telephone by physicians or office staff, other agencies (e.g., the Department of Social Services), nursing homes, hospital social service departments and persons in the community. Patient information given by the referral source is placed on an Intake/Referral form and consists of identifying information (name, address, telephone number), physician's name, pertinent medical diagnosis, treatment orders, Social Security and insurance numbers (if known). If the patient's physician has not made the referral, an Intake Nurse Coordinator will telephone the patient's physician for medical authorization to evaluate the patient's need for home health care. The patient must designate a physician to direct and supervise the plan of treatment.

A registered nurse will make an evaluation home visit the day following a referral, or no later than 48 hours, unless otherwise specified by the referral source. The purposes of the initial home visit are to explain the patient's Bill of Rights, to assess the patient's physical, psycho-social, and environmental needs and to verify that the patient meets the medical intermittent criteria for admission to the program. The R.N. completes a nursing assessment at this visit. From this assessment, problem nomenclatures such as alterations in activities of daily living or alterations in urinary elimination are identified.

After this information is provided to the physician, verbal medical orders are written onto an Intake/Referral Form and sent to the physician within 48 hours for signature. The medical orders are incorporated into the HCFA series, which must be completed, signed and returned to the agency's patient record within 14 days. The verbal orders allow for medical coverage during this interim.

Other medical orders required are secondary diagnoses, mental status, prognosis, functional limitations, rehabilitation potential, medications, nutritional requirements, activities permitted, treatments, medical supplies, teaching instructions, skilled observations, safety measures, when the physician was last contacted and the date of the next physician appointment. Other service disciplines can assist with gathering these data. For example, the physical therapist can verify the activity level.

The problem statements generate the formulation of goals/outcomes, rehabilitation potential, and discharge plans. For example: a goal/outcome would be: "Foley will remain unobstructed and patient will be without signs/symptoms of urinary tract infection within 60 days"; a rehabilitation potential statement would be: "Rehab potential is fair for skilled nursing goal"; an example of discharge plan would be: "Discharge to care of family and M.D. when catheter removed."

IMPLEMENTATION

Medical orders as stated on the HCFA series will be followed. If any progressive or regressive changes occur in the patient's condition, the physician will be notified by the service discipline involved. These changes in patient's progress may necessitate changes in medical orders. Visits may need to be increased or decreased, medication dosages changed, or new treatment orders obtained. A verbal order will be sent verifying the changes. These medical orders must be sent to the physician within 48 hours, signed by the physician and returned to the agency within 14 days. To expedite the above process, a self-addressed, stamped envelope is provided to physicians for return in the mail. The agency is most appreciative when these medical orders are promptly returned. If the medical orders are not returned, a staff member will call the physician's office.

At least every 62 days, the patient's physician reviews and signs subsequent Home Health recertifications to authorize continued medical services. The agency must receive these signed certifications from the physician within seven days prior to and no later than seven days after the beginning date of the recertified period as stated on HCFA 485, Field 3.

EVALUATION

The evaluation of care is a continuous, coordinated process between physicians and the multidisciplinary team. The patient goals are used as the basis for evaluating the quality of care given to patients. Reaching the goals are the measurement of the utility, relevance and practicality of services delivered. Without physician medical direction, goal attainment would not be possible. The ultimate goal of the collaboration between physicians and the Home Health Services team is to assist people in obtaining their optimal functional physical, psychosocial and emotional health status so they can remain in their homes. This effective coordination allows physicians to make informed decisions about their patients who require Home Health care.

For additional information and to share your ideas and comments, please contact Barbara Alexander, R.N., Appalachia I Home Health Services, P.O. Box 1906, Anderson, South Carolina 29622, (803) 260-5601. ☐

NURSING HOME LICENSING AND THE PHYSICIAN'S ROLE

DENNIS L. GIBBS, B.A.

South Carolina law requires that a nursing home which provides care for two or more unrelated persons must obtain a license to operate under regulations promulgated and enforced by the Department of Health and Environmental Control (DHEC). To ensure the safe and adequate treatment of persons served in nursing homes in this state, DHEC has the responsibility of establishing and enforcing basic standards for the licensure, maintenance and operation of health facilities and services. The standard used by DHEC to regulate nursing home care in South Carolina is Regulation 61-17, *Minimum Standards for Licensing Nursing and Institutional Nursing Infirmaries in South Carolina.* There are 151 licensed nursing homes (not including mental retardation facilities) with 14,319 licensed beds.

For the most part, the care received by patients in nursing homes is centered around the attending physician. Such care as medications, treatment, diet, activity participation, social services and physical therapy may be administered or provided only by order of a physician licensed to practice medicine in South Carolina. To promote the best in patient care, it is important for the physician to be aware of the requirements for the nursing home to maintain compliance with the regulations and standards. To meet these standards, facilities must rely on the cooperation of the physician.

Some of the licensure requirements for which physician cooperation is essential are:

(1) Five days prior to admission or within 48 hours after admission, a physician's record of physical examination (to include physical findings and diagnosis) and medical history shall be completed for each patient.

(2) Up until September 30, 1990, each skilled nursing patient was to be seen by a physician at least every 30 days, unless otherwise documented by the attending physician. Intermediate care patients were to be seen every 60 days. Since the Omnibus Budget Reconciliation Act of 1987 (OBRA), went into effect on October 1, 1990, designations of Intermediate Care Facility (ICF) and Skilled Nursing Facility (SNF) as they pertain to nursing homes were eliminated, resulting in no distinction being made between levels of care. Thus, every nursing home patient regardless of classification must be seen by a physician at least every 30 days, unless otherwise documented by the attending physician.

(3) Progress notes shall be entered after each visit to the patient by the prescriber.

(4) Physician's orders for medications, treatment, care and diet must be written in ink and signed by the prescriber.

(5) Physician's orders for medications, treatment, care and diet for patients must be reviewed and reordered at least once every 30 days by the physician.

(6) There must be a written order for safety precautions (restraints), to include length of time to be used, signed by the physician approving the use of safety precautions before they are applied to a patient. In the case of an emergency, the order must be written within 24 hours after it has been applied.

(7) All physician's verbal orders for medication and treatment shall be recorded in the patient's medical record and must be signed and dated by the nurse receiving the orders. They must be undersigned and dated by the prescriber or his designee within 48 hours.

In addition to these licensing requirements, other statutory and regulatory requirements are enforced by other regulating agencies such as the U.S. Department of Health and Human Services, the South Carolina Health and Human Services Finance Commission, and the Governor's Division of Ombudsman and Citizen Services.

Federal guidelines require that each nursing home must appoint a medical director who plays a critical role in the daily operation of a facility. Their input and insight on various committees, their role as liaison to the medical community, and their general oversight of the care provided are invaluable.

For those persons who do not need hospital care, South Carolina nursing homes provide an organized nursing staff and related services. Here too all nursing care is prescribed by or performed under the direction of doctors and other practitioners licensed to practice medicine and surgery. In any case, the physician's role in nursing home licensure is fundamental and is the foundation of quality patient care.

For further information please call the Division of Health Licensing at (803) 734-4680. ☐

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INFANT DEATH REVIEW: A NEW WAY TO UNDERSTAND YOUR COUNTY'S INFANT MORTALITY

DAVID F. KEELY III, M.D.
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ANN D. GATES, R.D., M.S.P.H.
CATHY L. MELVIN, PH.D., M.P.H.
WILLIAM M. SAPPENFIELD, M.D., M.P.H.

INTRODUCTION

In many counties around the state, fetal and infant deaths are being reviewed from the local community perspective. These reviews focus on and identify gaps in health care systems, financing and service delivery, and try to achieve a better understanding of the medical, social, health service and environmental factors that contribute to a local area's and the state's infant mortality problem. Eliminating these gaps should help reduce infant mortality and improve the health of all infants.

The Community Fetal and Infant Mortality Review (Community FIMR) provides a good opportunity for physicians to become more involved in preventive and community medicine in their local area. Since the review process responsibility is shared by multidisciplinary teams of health care professionals, time commitment is not a problem for physician participation. If anything, the efficiency and comprehensiveness of the process should prove more satisfying to physicians than the more narrow hospital-focused morbidity and mortality reviews. York County's Community FIMR is discussed here to illustrate one community's mortality review process.

HOW YORK COUNTY'S COMMUNITY FIMR GOT STARTED

York County's infant mortality rate (for live-born infants who die before age 12 months) declined during the 1980s; but, recently has ceased to decline. When the county's 1986-1988 rates are compared with the state's and nation's 1987 rates (Figure 1), differences emerge by race. For white infants, the county's rate was higher than the state's rate, which in turn was higher than the nation's rate. For infants of blacks and other races, these relationships were reversed. York County's higher white infant mortality rate was predominantly due to the county's higher neonatal mortality rate (for live-born infants who die before age 28 days) (Figure 1). The county's lower infant mortality rate for blacks and other races was because of their lower postneonatal mortality rate (28 days to one year after birth) (Figure 1). This low rate occurred following a steady decline over the last five years.

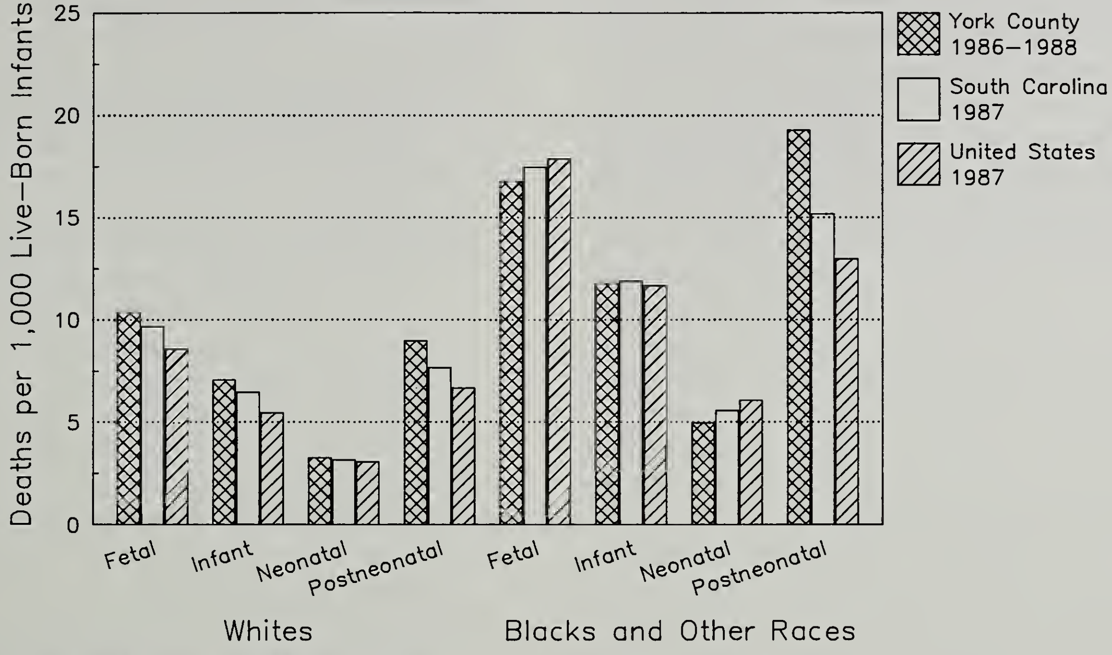
York County's fetal mortality rate (for stillborn infants) increased during the 1980s, especially among blacks and other races. Moreover, the fetal mortality rates for both race groups in York County were higher than the state's rates, which in turn were higher than the nation's rates.

In November 1989, the physicians in York County who were involved in perinatal care adopted an interdisciplinary, community-level fetal and infant mortality review process to address these and other differences. This team effort comprises two main groups: the Case Review Work Group and the Community FIMR Team.

REVIEW PROCESS

The Work Group consists of persons from the health department, local hospital, and private physician offices who are trained in either chart review and abstraction or the home interview process. The Work Group meets monthly to review abstracted cases and re-

Figure 1.– Mortality Rates for York County, South Carolina, and the United States*



*US rates are for whites and blacks only.

ports its findings to the Community FIMR Team via de-identified case review summaries.

The Community FIMR Team includes key individuals from the local hospital: medical staff section chairpersons from obstetrics, pediatrics and family practice; head nurses from the obstetrics floor/labor and delivery area and from the pediatric/newborn nursery area; one of the hospital pathologists; and a hospital social worker. Other community members include the county coroner; an epidemiologist, a social worker, a maternity program nurse from the local health department; the physician Health Department Director; and a certified nurse-midwife.

All fetal and infant deaths of York County residents are included in the review process. Primary emphasis is on neonatal deaths of infants with normal birth weight, followed by fetal deaths and postneonatal deaths not due to congenital anomalies.

The process begins as soon as the Work Group has knowledge of a death, which may be through the coroner's office, newspaper obituaries, or DHEC Vital Records. As soon as possible, a social worker contacts the parent to express sympathy for the loss and to offer emotional support. Providing grief counseling and connecting the family with existing community social support groups is the primary purpose of the home visit. During this visit, the social worker explains to the parent the Community FIMR process and asks if the family would participate in a home interview using a standardized questionnaire. The questionnaire addresses the circumstances preceding the death; the mother's knowledge/judgment about when to take a baby in for medical care; the mother's existing social support; and the mother's access to care, resources, and transportation in an emergency situation. The home interview is then scheduled at a convenient interview time. The social worker provides or refers the mother for follow-up services as needed.

Records from the health department, the hospital and the physician's office and other pertinent information such as coroner/pathologist reports and emergency room admission records are then abstracted. Chart and home interview information is condensed onto a death summary form, where circumstances surrounding the death are enumerated and causes of death are listed.

At its monthly meetings, the Work Group reviews these abstracted cases to identify factors that may have contributed to the death. Discussion helps determine what changes in the community, the family, the health care facility, and/or physician management will most probably lead to improved health status. These are ultimately the most important findings of the study, since they form the basis for interventions aimed at solving the problems. The Work Group compiles the information on individual deaths, monitors vital statistics mortality trends, and presents a summary of all reviewed cases and selected cases to the Community FIMR Team.

The Community FIMR Team meets on a quarterly basis to review selected cases and to aggregate summary information. After further discussion, from a community perspective, of the local health care system, the Community FIMR Team seeks to initiate policy and procedure changes that will resolve identified gaps in the system.

PRELIMINARY FINDINGS

Because the York County Community FIMR process is just beginning, results are only starting to accumulate. Community fact sheets have increased awareness of the magnitude of the local infant mortality problem and have revealed the need for a thorough, systematic review process at the community level. Enthusiasm for the project has been very high from everyone involved, highlighting the willingness of private providers and public health providers to work together to solve community problems. Communication between the county health department and the private medical sector has increased and has resulted in a subsequent increase in health department patient referrals to private physicians.

One more tangible result has been the institution of a "fetal kick count" protocol in the area. The protocol, in which most York County prenatal care providers are participating, involves teaching both low- and high-risk patients to count fetal movements daily. Patients are taught to initiate this count at 30 weeks gestation.

Several policy changes have also been implemented in the health department. Some examples are:

(I) The health department now follows up on all RPR reactive pregnant women to rule out false positives and assure that all true positives are properly treated.

(2) In the past, only pregnant women with insulin-dependent diabetes mellitus were referred to private obstetricians. Now all pregnant women with other unstable medical conditions, such as asthma, heart conditions, and certain neurological conditions are referred to private obstetricians for the remainder of their pregnancy. A maternity nurse follows up to make sure the patient keeps her appointment.

(3) The maternity discharge summary now includes referral to other programs, such as family planning and WIC, with follow-up and a home visit if the patient does not keep the appointments.

(4) When a fetal or infant death occurs, a social worker and family planning staff are notified, and one person is designated to follow up and assure that the patient is connected back to services.

FUTURE DIRECTIONS

Ongoing policy changes will occur throughout the process. Periodically, case information will be aggregated into a report that identifies common community problems and lists a set of recommendations. This report will be shared with the local medical society, public health staff, social service administrators, hospital administrators, elected officials in local government, consumer organizations, and other relevant groups and will be used to track community changes. An implementation strategy will be developed by Community FIMR Team members and representatives of community groups who are instrumental in achieving the implementation. Many problems may be resolved before this stage, but others may require a concerted effort.

Currently, 17 out of 46 counties in South Carolina (10 of 15 public health districts) are in some phase of initiating fetal and infant mortality reviews. This systematic approach should ultimately aid in further lowering our state infant mortality rate.

All physicians want to "make a difference" in the health status and health future of their own communities. With broader physician participation, the Community FIMR process can effect substantive improvements in your community health care system, as it is starting to do in York County.

For more information about what may be going on in your county, contact the Health Director of your County Health Department or Ann Gates, Project Director for South Carolina's Fetal and Infant Mortality Review, South Carolina Department of Health and Environmental Control, at (803) 737-4190. □

ACKNOWLEDGMENTS

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THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL'S RESPONSE TO THE AIDS EPIDEMIC

JEFFREY JONES, M.D., M.P.H.
ROBERT BALL, M.D., M.P.H.
LYNDA KETTINGER, M.P.H.

INTRODUCTION

In the case of the acquired immunodeficiency syndrome (AIDS) epidemic, as with many past epidemics, the government has allotted funds to public health agencies to (1) define the scope of the problem, (2) implement primary prevention to help stem the epidemic, (3) assist in the development of legislation to augment prevention efforts and (4) facilitate treatment. In the following article, a brief background of the public health response to HIV/AIDS in South Carolina will be presented with the current program components, their relationships to the private medical sector and future prospects for addressing the AIDS epidemic.

BACKGROUND

The first case of AIDS in South Carolina was reported in June of 1982, one year after the discovery of a cluster of pneumocystis pneumonia cases in Los Angeles was reported by the Centers for Disease Control in *Morbidity and Mortality Weekly Report*. AIDS was made a reportable disease in South Carolina in 1982. In 1985, when the human immunodeficiency virus (HIV) antibody test became available, HIV counseling and testing centers were set up in health departments throughout the state. The first efforts in partner notification were also initiated that year. In December of 1986, a statewide AIDS task force was created to receive public and private input for the South Carolina Department of Health and Environmental Control (DHEC) AIDS programs.

South Carolina was one of the first states to make HIV infection, in addition to AIDS, reportable in February, 1986. "Active" AIDS surveillance, which includes the hiring of staff to periodically contact physicians and hospitals, was begun in August, 1987 to help ensure complete, timely reporting of AIDS cases. Specific AIDS-related legislation with respect to disease reporting, confidentiality, partner notification and knowingly infecting other persons was enacted in May, 1988.

As of August 30, 1990, South Carolina had 1,095 reported cases of AIDS and 4,118 reported cases of HIV infection. South Carolina ranked twenty-third in the nation for incidence of AIDS cases between June 1989 and May 1990. Currently, approximately 35 new AIDS cases and 100 new HIV infections are reported each month.

SOUTH CAROLINA AIDS PROGRAM COMPONENTS

The current annual DHEC budget for HIV prevention and intervention is 5.2 million dollars, approximately half of which is federal funding, the other half being state funding.

The ten major components of the AIDS program statewide are as follows: (l) active surveillance of AIDS and HIV infection including seroprevalence studies; (2) confidential HIV counseling and testing (available free of charge in each county health department and offered routinely in DHEC sexually transmitted disease, tuberculosis, prenatal, and family planning clinics); (3) partner notification; (4) public education on how HIV is transmitted and prevented; (5) outreach to such groups as intravenous drug users, youth in high risk neighborhoods, and minority groups; (6) development of legislation and policy to assist prevention efforts; (7) research in prevention of HIV transmission; (8) development of a consortium for referral of patients with HIV-related disease to the private sector for treatment and support services; (9) a wide spectrum of laboratory testing to aid in the diagnosis and monitoring of HIV infection; and (10) a zidovudine program which provides free or low cost treatment through a federal grant to persons with HIV infection and/or AIDS.

DEVELOPING A PARTNERSHIP WITH THE PRIVATE MEDICAL SECTOR

DHEC, a public health and prevention oriented agency, has not sought to become directly involved in the primary care treatment of those with AIDS and HIV-related disease. A "fair share" approach has been developed to prioritize patients with HIV infection by stage of illness for referral to the private sector. Since March 1989, the department has offered CD4 lymphocyte counts and other laboratory tests to help stage persons infected with HIV who are tested at the health department. Repeat tests are offered at three- to six-month intervals to evaluate disease progression. CD4 lymphocyte testing at the health department may also be ordered by private physicians.

DHEC's Retrovir program provides zidovudine on a sliding cost scale to any patient who meets the criteria of a CD4 lymphocyte count less than 500, on a first come-first served basis as long as grant funds are available. Exceptions to the CD4 count cutoff of 500 may be made for pediatric patients. In fiscal year 1989-90, 120 persons received zidovudine from this program. Federal funding for zidovudine and other HIV/AIDS-related services is based on the number of reported AIDS cases in South Carolina, so the department strongly encourages reporting. The DHEC AIDS Division has set up a case reporting "hot line" to assist physicians with reporting (1-800-227-0873, Monday through Friday 8:30 AM to 5:00 PM).

THE FUTURE

In the following years, thousands of new cases of HIV-related disease and AIDS will occur in South Carolina. It will only be possible to care for these cases with an increased public-private partnership. Throughout the nation, models have emerged showing several options for how this partnership may develop. One option is for the health department to become directly involved in the prophylaxis and/or treatment of HIV-related disease and AIDS, including outpatient only, or outpatient and inpatient treatment. This would have some similarities, for example, to the DHEC tuberculosis (TB) program, which provides most of the outpatient treatment for TB patients in the state and provides funding for inpatient treatment. The primary difference between TB and HIV-related disease is that treatment prevents transmission of TB, whereas treatment does not currently prevent transmission of HIV. Therefore, treatment of TB is more likely to be seen by society as a public health function to prevent transmission than is treatment of HIV-related disease.

Although a limited Medicaid program now exists for AIDS patients in South Carolina, another option for the state is to expand indigent care funding, Medicaid, and health insurance risk pool coverage to provide reimbursement for treatment in the private sector. A third option is for the state to enhance the provision of laboratory testing services and/or provide drugs to support private medical sector care of patients with HIV/AIDS. However, this third option would still entail supplemental funding for physician and hospital services.

CONCLUSION

To date, the public health response to HIV/AIDS in South Carolina has largely involved prevention. Extensive prevention and surveillance programs are currently in place. However, as the number of HIV-infected persons grows, increased funding and a greater public-private partnership will be necessary to provide prophylaxis and treatment. DHEC will certainly play a role in the partnership through support services. Conclusive evidence that therapy reduces transmission would likely bring public health agencies such as DHEC into the treatment arena more quickly.

For additional information and to share your ideas and comments, please contact the DHEC Bureau of Preventive Health Services, 2600 Bull St., Columbia, SC 29201 or phone (803) 737-4040. □

HEALTH FACILITY LICENSING: PURPOSE, LEGAL FOUNDATIONS, CURRENT STATUS AND FUTURE DIRECTIONS

ALAN SAMUELS, B.A., M.B.A
RAY M. TEEMS, B.S., M.P.H.

Health facility licensing plays an important role in achieving the department's mission to protect the public's health and environment. Regulations governing health facilities such as hospitals and nursing homes establish standards intended to prevent undesirable outcomes in their operation. This basic function is strikingly similar to the licensing of physicians by the Board of Medical Examiners. In order to protect the community from substandard health care, the General Assembly has created regulatory authorities to operate on behalf of the consumer who is unable to inquire into or properly appraise the standards under which the service is rendered.

The similarity between health facilities and physicians in licensing leads to others. Basic standards are established to prescribe the conditions for entry into, and continued practice in, the regulated profession or activity. Decisions by the licensing authority to deny entry, to prohibit or restrict practice, or to invoke other sanctions or remedies are made within the context of certain legal concepts.

In effect, the legislative requirement for licensing is a formal general denial of a constitutional property right. This right is then restored individually by the administrative action of issuing a license. The regulated person or activity has the right to be seen in the best light and has a vested interest or right which results from issuance of the license. Any adverse determination must be made under due process of law. Fair procedure is required; no person may be deprived of property without an opportunity to be heard in defense of that right.

We all recognize that a licensing process does not guarantee perfect performance, or even high quality performance. In fact, licensing does not even assure that all the basic standards are continuously met by every licensee. What then does licensing accomplish?

The goal of licensing is prevention, not rehabilitation. It is future oriented, attempting to protect users of the service by reducing risks. This risk reduction generally has three foci:

— the character and competency of the licensee,

— the adequacy and appropriateness of the procedures and materials used to provide the regulated service,

— the safety and appropriateness of the physical plant.

The second focal point, how the regulated service is provided, is the area in which the bulk of the interactions occur between the physician and health facility licensing.

The rules that deal with the process and materials used to provide care in licensed facilities and activities seem to be all-encompassing. They cover the governing body; bylaws; policies and procedures; medication storage, preparation, administration and recording; infection control; sanitation; food service; functional safety; staffing; and personnel qualifications and training.

These rules exist not only to provide a safe and sanitary environment for the patients, but to provide a sound clinical setting for the physician as the central health care provider. The scope and details of examinations, diagnoses, care and treatments are determined by the physician. The physician communicates these determinations to other health professionals and ancillary personnel who must provide the required services.

The regulatory licensing standards for health facilities do not address the determinations that are within the scope of the professional practice of the physician. They do, however, deal with the process by which the physician's decisions and orders are received and implemented by others. This process sometimes irritates the physician. Not only must physicians' orders and notes be signed and dated, but verbal and telephone orders, which are received and transcribed by others, must also be countersigned and dated by the prescriber.

We all understand the need to ensure that the physician's communications are received, understood and implemented as originally intended. That is the underlying reason for requiring documentation. This understanding must override the impulse to disregard or become upset with "the system."

Table 1 outlines the 18 types of activities which are regulated by the Division of Health Licensing. Each set of licensing standards is unique and directed toward the specific type of activity which is regulated. However, the common threads of future orientation, prevention and the protection of rights, discussed above, apply universally.

Moreover, these standards are not set in concrete. As technology and philosophy evolve, we try to modify the regulations as needed to adequately address the safety, health and welfare of the citizens who have charged us with that task. We appreciate the opportunity to work together toward that end.

For additional information and to share your ideas and comments, please contact Alan Samuels or Ray Teems, Division of Health Licensing, DHEC, 2600 Bull Street, Columbia, South Carolina 29201, phone (803) 734-4680. ☐

TABLE 1

S.C. Department of Health and Environmental Control
DIVISION OF HEALTH LICENSING
SUMMARY OF REGULATED FACILITIES AND ACTIVITIES
as of July 1, 1990

Category	*Number Regulated*	
INPATIENT	383	
Hospital		100
(General)		(71)
(Specialized)		(17)
(Institutional General)		(2)
(Institutional Specialized)		(1)
(Institutional General Infirmary)		(9)
Chiropractic Facility		1
Residential Treatment Facility for Children and Adolescents		3
Nursing Home		155
Habilitation Center for the Mentally Retarded		124
COMMUNITY RESIDENTIAL CARE		
Community Residential Care Facility	394	
OUTPATIENT and HOME CARE	419	
Adult Day Care Facility		29
Ambulatory Surgical Facility		15
Outpatient Chemical Dependency		64
Home Health Agency		49
Hospice		15
Hearing Aid Dealer and Fitter		167
Temporary Permit		23
Lay Midwife		5
Renal Dialysis Facility		44
Birthing Center		0
Health Maintenance Organization		4
Acupuncture Facility		4
GRAND TOTAL	1196	

STATE-AID CANCER CLINICS: TREATMENT AND FOLLOW-UP SERVICES FOR INDIGENT PATIENTS

MARGARET A. SENN
BRENDA C. NICKERSON, R.N., M.S.N.
FRANCES C. WHEELER, PH.D.

INTRODUCTION

To improve care and services for cancer patients in this state, the South Carolina State Board of Health and the Executive Committee of the South Carolina Medical Association joined forces in 1939 in a unique, joint effort of public and private health care providers. At the request of the board, a Cancer Control Law was formulated by a special Cancer Commission of the medical association. The law was passed by the General Assembly and signed by the Governor on June 24, 1939.

This law authorized the Board of Health to formulate a plan for the care and treatment of indigent persons with cancer, to establish standard requirements for cancer units in the state's general hospitals and to specify the conditions under which indigent cancer patients may receive financial aid in approved hospitals. It also authorized the board to furnish aid to patients within the limits of available funds and to administer that aid to afford the greatest benefit to cancer patients throughout the state. This act carried no appropriation. In 1941, the General Assembly made the first of continuing annual appropriations for the cancer program in the amount of $8,000. Over the years the program has grown so that the appropriation for Fiscal Year 1990-91 was $1.38 million.

Today at DHEC, the cancer program includes surveillance of cancer mortality, morbidity, and risk factors; primary prevention through smoking and nutrition education; and secondary and tertiary prevention through the operation of the State-Aid Cancer Clinics. From their beginning nearly 50 years ago, the State-Aid Cancer Clinics have been the focal point of the DHEC cancer program and have had the interest and support of the medical profession. Not only are many physicians serving without pay in the State-Aid Cancer Clinics, but they also have been active members of the Cancer Control Advisory Committee. Organized in 1983, this committee provides direction and advice regarding administration of treatment funds, implementation of professional, public and patient education and development of long-range plans for statewide cancer control. The purpose of this paper is to provide an overview of the State-Aid Cancer Clinics and to summarize guidelines for patient eligibility, types of services, location of clinics, and how to access services.

WHO IS ELIGIBLE FOR SERVICES?

South Carolina residents who have cancer for which there is a reasonable chance of arrest or who have a suspicious Pap smear are eligible for admission to the State-Aid Cancer Clinic. Referral guidelines for abnormal Pap smears are one moderate or severe dysplasia, two mild dysplasias three months apart, or three minor atypias six months apart. These guidelines are currently under review by a subcommittee of the Cancer Control Advisory Committee. The patient must be referred by a physician.

A patient's financial eligibility is determined by a sliding fee scale based on U. S. Department of Health and Human Services poverty guidelines. Financial information is requested on the application, and a financial interview is conducted during the patient's first visit to clinic. The majority of patients are eligible for 100% coverage, but many patients make small contributions toward paying for their care. All third party resources are billed prior to billing the cancer program.

HOW ARE SERVICES OBTAINED?

The referring physician completes an Application for Special Services (DHEC Form #1625) on behalf of his or her patient. The application includes the reason for referral, the clinic to which the patient is being referred, the patient's name and address, social and financial data and the patient's signature. The form is completed in duplicate and mailed to the state office for review by cancer program staff.

The approved application is forwarded to the specific clinic to which the patient is to be referred. Local clinic staff send an appointment letter to the patient with a copy to the referring physician. Payment cannot be made for services provided prior to the application's approval.

WHERE ARE SERVICES OBTAINED?

State-Aid Cancer Clinics are operated in nine hospitals in South Carolina: Anderson Memorial, Baptist Medical Center (Columbia), Greenville Hospital System, Medical University of South Carolina (Charleston), McLeod Regional Medical Center (Florence), The Regional Medical Center of Orangeburg and Calhoun Counties (Orangeburg), Richland Memorial Hospital (Columbia), Self Memorial Hospital (Greenwood), and Spartanburg Regional Medical Center.

To receive state funds for the operation of a State-Aid Cancer Clinic, these hospitals must meet the following six criteria:

- approval of the hospital's cancer program by the Joint Commission and the Cancer Commission of the American College of Surgeons,
- at least one oncologist on staff,
- availability of all accepted modalities of cancer treatment,
- full compliance with all federal, state, and local regulations affecting the operation of a hospital and outpatient clinics,
- agreement to accept Medicare, Medicaid, and other third party carriers as primary providers, and
- agreement to accept all patients sponsored by the State-Aid Cancer Clinic.

Services are available only through these established cancer clinic hospitals. No payment can be made for services provided in other locations.

WHAT SERVICES ARE AVAILABLE?

Outpatient treatment for cancer may include chemotherapy treatments, radiation therapy, outpatient surgery and other procedures that may be performed on an outpatient basis. Outpatient treatment for suspicious Pap smears may include cryosurgery, laser surgery and conization. There is no time limit for services provided, but patients free of cancer for five years are referred back to their private physician for long-term followup. While no inpatient services are covered by the program, patients requiring hospitalization may qualify for support under the Medically Indigent Assistance Fund.

SUMMARY

State-Aid Cancer Clinics in South Carolina provide outpatient services for medically indigent patients who have a diagnosed cancer or a suspicious Pap smear and who are referred by a physician.

The program pays only for outpatient services provided in one of the nine cancer clinic hospitals. Professional services, transportation and inpatient services are not covered. Although program funds are limited, the State-Aid Cancer Clinics served 3,767 patients in FY 1989; 1,104 of these were new patients and 2,663 were for continuing care. The program's operation is dependent upon the interest and support of the medical profession, particularly those physicians who give of their time and talent without pay to treat the medically indigent patients served in the clinics. This truly is a unique partnership in which the public and private sectors share a common goal of reducing unnecessary mortality and morbidity associated with cancer in South Carolina.

For additional information and to share your ideas and comments, please contact Brenda Nickerson, M.S.N., Director, Division of Cancer Prevention and Control, S. C. Department of Health and Environmental Control, 2600 Bull Street, Columbia, S. C. 29201; telephone (803) 737-4120. ☐

COMMUNITY RESIDENTIAL CARE: WHAT EVERY PHYSICIAN SHOULD KNOW

SANDRA S. JONES

The Community Residential Care Facilities program is one of the 18 programs regulated by the Division of Health Licensing (DHL). A Community Residential Care Facility (CRCF) offers room, board and a degree of personal assistance with activities of daily living. Although this sounds simple, the issues become complex when the varying needs of the residents and the capabilities of the facilities are considered.

As of July 1, 1990, there were 396 CRCF in South Carolina which provide care to the elderly, mentally ill, developmentally disabled, substance abusers, persons who have sustained head injuries and persons who are HIV-positive. Within each of these general groups, a CRCF may target a specific population such as Alzheimer residents, autistic residents or alcoholics. This diversity contributes to the confusion experienced by many in their attempt to identify appropriately and define what a CRCF is and who is appropriately referred or admitted to a CRCF.

This diversity is compounded by the educational level of administrators, which range from the sixth grade to Ph.D., and the range of experience from none to licensed nursing home administrators. It is important to know that prior to June 25, 1990, there was no requirement or law in South Carolina which mandated the licensing of CRCF administrators. Standards for licensing community residential care facilities (R61-84) now require that an administrator must be of legal age, and physically, mentally and emotionally capable of meeting the responsibilities of the position. If the facility was licensed after May 1986, the administrator must be a high school graduate or equivalent.

It is also important to understand the history of the CRCF program. In September, 1984, the General Assembly transferred to DHEC the authority and responsibility to regulate CRCFs that had previously been licensed by three other state agencies, the Departments of Social Services, Mental Retardation and Mental Health. Each agency had its own set of licensing regulations and enforcement procedures. This accounts for some of the diversity which continues to exist due to the "grandfathering" of existing physical features in CRCFs. In facilities licensed since 1986, this diversity has been greatly reduced by the development, adoption and enforcement of R61-84.

DHEC is very concerned with improving conditions in all facilities which are licensed. Persons who observe poor conditions at the facilities should report their observation to the Division of Health Licensing, so investigations, if appropriate, can be conducted and corrective action can be taken, if required. It is important to report specific facts to include names, dates and conditions observed. Due to a change in law during the 1990 session of the General Assembly, the Division of Health Licensing can also release information about a specific community residential care facility. Section 44-7-315 of the South Carolina Code of Laws now authorizes the release of such information in response to specific written requests. Thus, in your community, prior to a recommendation for placement of a resident in a CRCF, an opportunity exists for the physician, social worker and family who may be assisting in this process to gather information regarding the status of available CRCFs. To increase your awareness of what is available in your community, list(s) of licensed CRCFs, which are updated several times a year, are available upon request.

Understandably, it is not always possible to do extensive research prior to placement of a resident in a CRCF. Many factors play roles in this process. Generally, time is the most crucial factor. However, it can be assumed that if the CRCF is licensed, it has the capability to provide adequate care.

The role of the physician is critical in this placement process. R61-84 requires a medical examination report, which at a minimum attests to the propriety of placement in a CRCF. Therefore, it is necessary for the physician to also know that R61-84 specifies criteria in determining the propriety of placement.

The following criteria identify who is not an appropriate candidate for residential care: (1) any person suffering from acute mental illness likely to endanger himself or others; (2) any person under 18 years of age; (3) any person needing hospitalization or skilled or intermediate nursing care; (4) any person needing the daily attention of a licensed nurse; and (5) any person not meeting the requirements for admission. The facility may determine who is eligible for admission in their policies, as long as compliance with state and federal laws and regulations is maintained.

In making the decision regarding the appropriateness of residential care, it is also important that the physician be aware of the following characteristics of a CRCF:

(1) Unlicensed personnel administer the prescribed medication for each resident. The South Carolina State Board of Nursing considers qualified staff in CRCF to be acting as family surrogates and, therefore, would not be in violation of their regulations regarding unlicensed personnel administering medications. This practice is consistent with R61-84, which does not require licensed nurses on a CRCF staff.

(2) If a resident is capable of administering his own medications, then it is necessary that the physician include in the information provided to the CRCF a statement which authorizes the resident to continue to self-administer his medications.

(3) Reg. 61-84 states that no resident may be required to do any job or duty which is normally assigned to a staff member. However, a resident may engage in such activities if it is strictly voluntary. These activities may include washing his or her own clothes, making his or her bed, or tending a flower or vegetable garden. It is important that the physician attest to whether a resident is capable of engaging in such activities and can assume responsibility for that activity. For example, if a resident is interested in maintaining a small rose garden, certain sprays which might be used are harmful if swallowed. Does the resident experience failure in judgment which might cause him to use these products inappropriately? The same could be true about laundry products. Questions such as these must be considered and appropriate activities identified. This process is important because the CRCF level of care is for the protection of residents who need assistance and/or supervision for their well being. It is not designed to force residents to be dependent in those areas of their lives in which they continue to be independent.

(4) Not all CRCFs are the same, due to differences in mission, administration, physical structure and the resident population which they have chosen to target and serve. Therefore, any person involved in the placement of any resident into a CRCF must determine that the facility can meet the needs of that resident prior to placing the resident. To aid in that process, a written statement of facility services and related charges must be provided by the facility prior to or at the time of admission to the resident or their representative. Appropriate placements cannot be made without this information, and the best placements will occur when prior planning and information sharing occurs before the day of admission.

For more information, call the Division of Health Licensing, DHEC at (803) 734-4680 or write to 2600 Bull Street, Columbia, South Carolina 29201. □

THE CENTER FOR HEALTH PROMOTION: POSITIVE HEALTH BEHAVIORS FOR LONGER, HEALTHIER LIVES

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With high mortality rates and low life expectancy, South Carolina ranks 46th in a national comparison of the general health of the population. While many factors contribute to the overall health of the state's citizens, there is clear evidence of an association between lifestyle behaviors and the health status of the population. Within the S.C. Department of Health and Environmental Control (DHEC), the Center for Health Promotion is the focal point for preventive public health efforts to reduce the prevalence and severity of risk factors associated with the leading causes of death and disability in South Carolina.

The center's mission is to improve health status by promoting positive health behaviors. This is accomplished through a variety of individual and community efforts to encourage and support positive health behaviors and environmental improvements. These activities may involve health education as well as other organizational, economic and environmental interventions targeted toward specific lifestyle behaviors that are harmful to health. The purpose of this paper is to describe the scope, purpose and major activities of the Center for Health Promotion.

RISK FACTORS

Cardiovascular disease and cancer are the leading causes of death in South Carolina, accounting for nearly 70% of all deaths. To address these problems, the Center for Health Promotion has focused its efforts on three cross-cutting risk factors—cigarette smoking, excess dietary fat, and physical inactivity. Program objectives speak to reducing the prevalence of these three risk factors, which are associated with the major chronic diseases and with other risk factors such as hypertension, elevated cholesterol, and obesity.

TARGET GROUPS

The Center for Health Promotion offers programs and services for the general population. All citizens of South Carolina are at risk, and all must accept responsibility for health problems and solutions. Because citizen participation is essential, the Center for Health Promotion encourages the development of community coalitions to gain input and involvement from multiple community sectors—government, education, business, churches, health care, media, voluntary agencies and the general public.

Sites for program delivery include schools, worksites, churches, health care settings, restaurants, supermarkets and the community at large. Because of the discrepancies between black and white health status in South Carolina, special efforts are made to develop programs at sites that have the largest minority representation.

INTERVENTIONS

For the Center for Health Promotion, the community is the patient. The Center is committed to a community-based, rather than clinic-based, public health approach to health promotion for two main reasons. First, identification and treatment of high-risk individuals has a limited impact on the population as a whole. A significant reduction in the prevalence of disease in the community can occur only if risk factor levels are modified in the majority of individuals. Second, many of the risk factors that need to be reduced are considered personal lifestyle risks, but are, in fact, largely determined by societal and environmental forces. For example, eating patterns, smoking and regular physical activity are learned behaviors that are strongly influenced by cultural norms. Attempts to change such behaviors must be addressed by the community at large.

To influence social and cultural norms that are shaped by laws, media content, the physical environment and other forces beyond the control of the individual, the Center for Health Promotion has defined multiple targets for change and multiple approaches to change, with an emphasis on systems rather than individuals. Program methods include public awareness (mass and targeted media, speakers' bureaus, community-wide campaigns and special events), professional education (patient counselling guides, updates, workshops and seminars), coalition-building, consultation to other organizations and agencies, and policy development.

RESOURCES

The Center for Health Promotion is committed to a multi-disciplinary team approach, as complex health and social issues require different perspectives and different skills for effective program development and implementation. With this in mind, efforts are being made to place a minimum team of nurse, nutritionist, health educator and clerical support person in each of DHEC's 15 public health districts. The complete team currently is in place in only three areas, but all districts have one or more professional staff conducting the health promotion program at the local level.

EVALUATION

Assessment and evaluation are essential components of the health promotion program. Health problems and associated risk factors are carefully identified through vital records data, hospitalization data, risk factor surveys and special studies. As part of its annual planning process, each district program conducts an assessment of available community resources for health promotion. At the state level, annual evaluation is based on changes in mortality, morbidity, and risk factor prevalence, and on increases in the number of community-based health promotion programs available to the citizens of the state.

CONCLUSION

The overall objective of the Center for Health Promotion is to establish community-based health promotion programs that address smoking, exercise and diet that reach at least 50% of the state's population and that give priority to reaching minorities.

Public health and private medicine must be partners in this effort. We encourage physicians to be a part of coalitions which address community health problems and invite them to call upon local health promotion staff for technical assistance, consultation and program materials.

For additional information and to share your ideas and comments, please contact Jim Ferguson, Director of Community Services in the Center for Health Promotion, SC Department of Health and Environmental Control, 2600 Bull Street, Columbia, SC 29201, or telephone (803) 737-4120. □

REGULATION OF CONTROLLED SUBSTANCES DISTRIBUTION

THOMAS D. WYATT, JR., R.PH., J.D.

The Bureau of Drug Control consists of two separate units, the Office of the Pharmacy Consultant and the Narcotic and Drug Control Division. The bureau and staff are located in the historic Mills Building on the State Hospital campus in Columbia.

The Pharmacy Supervisor is a Registered Pharmacist with a Master's degree in Pharmacy Administration. She primarily provides pharmaceutical guidance, supervision and consultation to DHEC pharmacists and nurses for the safe use, storage, dispensing, and distribution of drugs. She monitors compliance with DHEC agency policies and procedures as well as the various state and federal laws and regulations by conducting on-site visits to county health departments, outlying clinic sites and health district offices. She advises agency program directors, project administrators, physicians, nurses, other staff and private practitioners on bioavailability, bioequivalence, therapeutic equivalence, and other information and aspects of investigational, prescription and over-the-counter products.

The Narcotic and Drug Control Division consists of the division director and ten controlled substances inspectors, all of whom are pharmacists, and two controlled substances investigators, who are experienced law enforcement officers.

The main thrust of the bureau's activity is toward enforcement of the South Carolina Controlled Substances Act as it pertains to the registration of licensed physicians, dentists, pharmacies, veterinarians, podiatrists, hospitals, teaching institutions, researchers, manufacturers, and distributors who wish to handle that class of chemicals, plants, drugs and other substances known collectively as "controlled substances." Every person or entity that engages in any use of controlled substances in the regular course of professional practice, business, research or teaching is required to obtain a registration certificate from the Bureau of Drug Control and from the United States Drug Enforcement Administration (DEA) prior to engaging in such activity. On July 1, 1990, there were 8,990 persons and entities registered with the bureau.

The Narcotic and Drug Control Division's enforcement activity is directed toward the reduction of diversion of controlled substances from legitimate professional or industrial uses into the illicit drug market. The bureau has statutory law enforcement authority and is actively engaged in criminal prosecutions in both the South Carolina and the federal court systems. Funding for the activities of the bureau is largely from the registration fees, with only 37% of the current funding being state-appropriated tax funds. Recently, a section in the federal law has permitted a portion of drug-related federal forfeitures to be granted to the states in the approximate proportion of the amount of investigative participation by the state agency in a federal prosecution. During FY90, the Narcotic and Drug Control Division was granted over $85,000 to be used for direct law enforcement expenditures as required by the federal statute.

Besides its direct law enforcement role, the division is required to inspect each registrant not less than once every three years. The General Assembly, however, has never funded the division to the extent required to meet this statutory mandate. As an alternative which has proven to be effective, the division inspects each pharmacy registrant approximately twice every three years, thereby obtaining in fact an indirect inspection of the controlled substances activity of every prescriber in the area. Non-pharmacy registrants are inspected on a random frequency, with only those which handle or purchase relatively large quantities of controlled substances being regularly inspected every three years. The division also annually conducts 40 random audits of controlled substances registrant activity to determine if adequate recordkeeping procedures are being followed.

For many years, the bureau has worked very closely with the state's professional licensing boards in the various investigations relating to drugs. Until only a few years ago, the bureau conducted the majority of all investigations for the State Board of Medical Examiners, the State Board of Dentistry, the State Board of Nursing, and the State Board of Pharmacy. Beginning in the late 1970s, some of the various licensing boards were assigned investigators from the Office of the Attorney General; others employed their own. Cooperation has been close and support has been excellent.

The bureau wishes to be helpful to all citizens, whether they are directly regulated or the beneficiaries of regulation. It strives to be fair and provides strict enforcement. It is generally conceded that this methodology has resulted in a relatively low incidence of diversion of the legitimate drugs in this state into the black market, yet has provided an adequate supply to those patients who need the drugs for proper medical care. This is the ideal balance, but it is difficult to maintain without the cooperation of the regulator and the regulated. Cooperation in this state has been unexcelled. It is only the high degree of voluntary compliance with the drug laws that has made the overall enforcement successful.

For more information call or write the Bureau of Drug Control, South Carolina Department of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina 29201, (803)737-3999. □

On the Cover:

CHARLES FREDERICK WILLIAMS: (1875-1948)
STATE HEALTH OFFICER, 1908-1911
PRESIDENT, SCMA, 1923

Dr. C. Frederick Williams was South Carolina's first State Health Officer, appointed when the position was created in 1908. He resigned from this position in 1911 to take up postgraduate studies in Europe.

Although he served in a variety of positions throughout his life (Assistant Surgeon in the US Army, City Physician for Columbia, secretary of the State Board of Health, private practitioner in both General and Internal Medicine) and held posts of honor and responsibility in numerous organizations (Columbia Medical Society, SCMA, AMA, S. C. Hospital Association, and the American Psychiatric Association, to name a few), the pivotal point in his life was May 1, 1915.

On that day Dr. Williams assumed his duties as the sixth Medical Superintendent of the State Hospital for the Insane, a name that Williams soon changed to The South Carolina State Hospital. This name change and his many changes in policy at the hospital and the complete revision and modernization of the laws relating to care of the mentally ill are all reflections of his concern for his patients.

One of his first official acts as Superintendent was to order the removal of the restraints of wristlets, straight jackets, etc. from the patients—a policy that earned him the reputation as the Philippe Pinel of South Carolina. During his administration he was successful in elevating the standards for the care and treatment of the mentally ill. Through his endeavors the entire hospital plant was renovated and developed into one of the finest in the nation.

Thirty years to the day after undertaking it, Dr. Williams resigned to become the first Director of Research. He remained there until his sudden death in 1948. This journal wrote in his obituary: "Fred Williams has gone but the seventy-one years he spent upon this earth have made South Carolina a better place in which to live. And those of us who were privileged to call him colleague and friend, have lost a comrade whose very presence made life a little finer and a little nobler."

Betty Newsom
The Waring Historical Library

President's Page

BASIC BENEFITS

Last summer in Chicago, the AMA House of Delegates adopted a resolution defining a basic benefit health plan. Oregon has been wrestling with this issue in an attempt to more appropriately allocate health care resources (money). The South Carolina Medical Association Board of Trustees has adopted essentially the same plan as the AMA and it is being coordinated with others to develop a plan which all segments of S.C. society can get behind.

This whole concept attempts to define some healthcare system or plan which provides for a basic level of health care for every citizen. This to me is a worthwhile goal to pursue.

Are there problems? Certainly so. Daniel Callahan, in his book, *What Kind of Life,* discusses this issue. He suggests synonyms for a "basic" benefit, such as "adequate, minimal, and necessary." Immediately we have the problem of possibly accepting a healthcare plan that meets only minimal or necessary needs. He cautions that such plans frequently have "a standard of adequacy that is so low that many legitimate individual needs are excluded or so high that it would require impossibly high levels of technology or expenditure."

He goes on to say that the "problem reflects the standard difficulties of agreeing on anything about individual lives in a pluralistic society."

Perhaps therein lies the major problem. That is that we in the healthcare delivery system have to resolve the conflict between individual needs versus society needs.

Help me explore this issue. Your thoughts are welcomed.

John W. Simmons MD

JOHN W. SIMMONS, M.D.
President

The Journal OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

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MANAGEMENT OF THE HIV-INFECTED PATIENT: A COMPREHENSIVE APPROACH*

CHARLES S. BRYAN, M.D.**
THE SCMA AIDS TASK FORCE***

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*Preparation of this article was requested by the SCMA Board of Trustees.

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INTRODUCTION

This year marks the tenth anniversary of the first reports of what we now call AIDS, the great pandemic of our times. As of December 31, 1990, there were 1,217 cases of AIDS and 4,490 of HIV infection reported in South Carolina. It is now predicted that the cumulative total of AIDS cases will reach 2,240 by the end of 1991 and 3,380 by the end of 1992. These numbers mandate that all physicians be familiar with this disease.

The Board of Trustees of the South Carolina Medical Association asked the SCMA AIDS Task Force to outline a comprehensive approach to AIDS/HIV infection for primary care physicians. In offering such an approach, we recognize that ours is a mixed message.

On the one hand, we believe that management of the earlier stages of HIV infection has become relatively straightforward. Recognition, counseling, initiation of AZT (Retrovir; zidovudine), and prevention and treatment of *Pneumocystis carinii* pneumonia (the most common AIDS-defining infection) are well within the scope of primary care medicine.

On the other hand, numerous complexities and a burgeoning literature tax the abilities of even the most dedicated subspecialist. The expanding spectrum of HIV disease evokes memories of the old dictum: “know tuberculosis and syphilis and you’ll know all of medicine.” Also, we believe that even the early phases may require more complicated, multidrug regimens in the near future. Therefore it would be misleading to suggest that HIV infection can always be managed by a simple algorithmic approach.

Our purpose is (1) to outline a comprehensive approach to present management of AIDS/HIV infection; (2) to describe ways to overcome the barriers to caring for these patients; and (3) to offer a framework for remaining up-to-date in this rapidly evolving field.

We have placed what we consider to be today’s essential, must-know information in tables, and suggest that readers study the tables prior to digesting the text. Common abbreviations used throughout this article are shown in Table 1. We polled members of the South Carolina Infectious Diseases Society for opinions on several controversial issues, and found a general agreement. We have attempted to provide a selective, up-to-date bibliography. All references cited in the text were published during 1990 or early 1991.

We shall consider this attempt to have succeeded if we can convince more primary care physicians to become involved in the care of these patients.

TABLE 1

ABBREVIATIONS USED IN THIS ARTICLE

AIDS = acquired immunodeficiency syndrome
AFB = acid-fast bacilli
AZT = azidothymidine; zidovudine; Retrovir
CBC = complete blood count
CDC = Centers for Disease Control
CD4 = CD4 lymphocyte (also: CD4-positive lymphocyte; T4 lymphocyte; helper lymphocyte)
ddC = dideoxycytidine
ddI = dideoxyinosine (didanosine)
DHEC = South Carolina Department of Health and Environmental Control
DSS = South Carolina Department of Social Services
EIA = enzyme immunoassay (also known as ELISA)
HIV = human immunodeficiency virus (HIV-1, unless otherwise specified)
HIV-1 = human immunodeficiency virus, type 1
HSV = Herpes simplex virus
IFN-alpha = interferon-alpha
INH = isoniazid
IV = intravenous
MAI = *Mycobacterium avium-intracelluare*
MUSC = Medical University of South Carolina
PALSS = Palmetto Aids Life Support Services
PCP = *Pneumocystis carinii* pneumonia
PCR = polymerase chain reaction
PZA = pyrazinamide
SCIDS = South Carolina Infectious Diseases Society
SSI = supplement security income
TMP = trimethoprim
TMP/SMX = trimethoprim/sulfamethoxazole (Bactrim; Septra)
USC = University of South Carolina

BASELINE INFORMATION: “THE FACTS ABOUT AIDS”

The essential “facts about AIDS” should by now be familiar to all physicians. We shall stress a few points useful for discussing AIDS/HIV infection with patients and with the general public.

AIDS is the *a*cquired *i*mmuno*d*eficiency syndrome. A *syndrome* (from the Greek, "running together with") is an arbitrary diagnosis based on certain associations. Patients, physicians, and the general public should focus not on the arbitrarily defined syndrome known as AIDS but rather on the causative virus, HIV-l (hereafter referred to as HIV).

HIV-infected patients can be asymptomatic for many years, appear normal in all outward respects, and pass the most meticulous physicial examinations. Eventually, damage to the immune system leads to a variety of disease manifestations some of which fulfill the current case definition of AIDS. By current estimates, 65% to 100% of HIV-positive patients will develop AIDS by 16 years after the infection.[1] There is some evidence that the incubation period (that is, from initial infection to the development of AIDS) may be lengthening.[2]

HIV infects certain cells bearing a surface molecule known as the CD4 (or T4) receptor. Foremost among these is the CD4 lymphocyte (also known as the helper, T4, or CD4-positive lymphocyte). Macrophages can also display the CD4 receptor and are important to pathogenesis. We are now learning that a variety of cells—including skin cells, intestinal epithelial cells, and brain cells—can be infected, and that binding to the CD4 receptor is not always required.

The CD4 lymphocyte continues to hold center stage despite these new observations. This cell occupies a pivotal position within the immune system, aptly likened to the conductor of an orchestra or the general of an army (Figure 1). HIV destroys the CD4 lymphocyte both directly (as by active infection) and indirectly (as by immune mechanisms). A slow but steady decline in the number of circulating CD4 lymphocytes characterizes the usual course of HIV infection. As a corollary, the CD4 lymphocyte count remains the single most useful test for advising patients about prognosis.

We understand a great deal about HIV transmission. The major routes are sex, blood (usually parenteral exposure), birth (mother-to-infant), and perhaps nursing. Transmission through casual contact is extremely rare, if it occurs at all.

Carefully-done studies of non-sexual household contacts have failed to show transmission even when there was extensive sharing of utensils, hugging, and dry-kissing with AIDS patients. Patients, their relatives and friends, and the general public still need reassurance that "HIV is hard to get." Blood exposure remains a major concern to medical personnel (this topic, reviewed recently,[3,4] is beyond the scope of the present article).

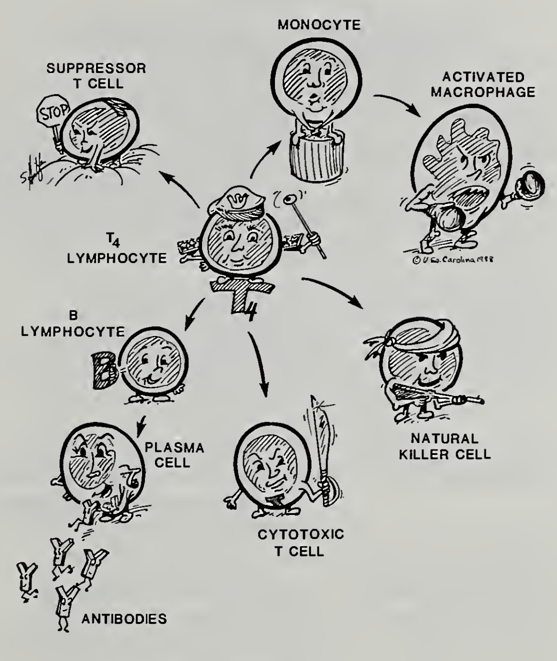

FIGURE 1: The CD4 (or T4) lymphocyte—analogous to the general of an army—is pivotal to much of the immune system. Among its functions (clockwise from 12 o'clock) are: conversion of monocytes into activated macrophages (which destroy such pathogens as fungi, parasites, and intracellular bacteria); production of natural killer cells and cytotoxic T cells (which destroy, among other things, embryonic cancers); proliferation of B lymphocytes and development of plasma cells (which make antibodies); and stimulation of suppressor T cells (which keep the immune response from getting out of hand).

BARRIERS TO CARING FOR HIV-INFECTED PATIENTS

Many medical organizations have taken the position that physicians should assume the care of HIV-infected patients within their areas of competence. The extent to which physicians are morally obligated to perform procedures with high risk of blood exposure remains controversial. A survey sponsored by the SCMA and conducted by researchers at

TABLE 2

BARRIERS TO THE CARE OF HIV-INFECTED PATIENTS

BARRIER	RESPONSE
Fear of transmission of the disease	The risk is manageable. It is becoming better defined; AZT post-exposure prophylaxis may be of benefit.
Lack of financial support for patient care services	A Medicaid waiver is available. Social services personnel may be able to offer assistance.
Lack of psychosocial support services	A variety of psychosocial support services are available. A guide to them (SHARING) can be obtained from DHEC.
Lack of information about the disease	A wide variety of learning resources are available. These include access to the National Library of Medicine's AIDSLINE.
Phobias toward persons in high-risk groups	Risk factors are widespread in our society. To a large extent, these phobias are irrational.
Lack of adequate referral patterns	Referral centers exist in most areas of South Carolina.

the USC School of Public Health will shed light on South Carolina physicians' attitudes toward barriers to caring for HIV-infected patients. We shall review briefly these barriers and offer a few perspectives (Table 2).

Fear of Transmission of the Disease

The argument has been advanced that today's physicians must treat HIV-infected patients because physicians have always behaved altruistically in the face of danger. Factual support for this argument is weak. A candid reviewer noted: "of what physicians have actually done over the last 2,400 years, little more can definitely be said than that many have not tried to escape mortal risk while others have done so."[5]

There is little or no evidence that physicians of previous eras faced a slow, subtle, tortuous, highly-lethal retroviral infection analagous to HIV infection. Our course is uncharted. We do not dispute the claim that the risk of HIV infection makes certain aspects of procedure-oriented medicine a hazardous occupation.[6] Needlestick accidents occur frequently in medical practice, are to some extent unpreventable, and place all health care workers at some risk of HIV transmission.[7]

Nevertheless, surveys indicate that few American primary care physicians have refused to care for HIV-infected patients primarily because of fear of acquiring the disease. One study suggested that the "pragmatic constraints" of private practice are far more important. These included difficulty finding consultants to manage complications; fear of losing other patients from one's practice; and concern that treating patients with AIDS poses a financial risk to one's practice.[8]

In making ethical decisions, our emotions should be regarded as both real and valid.[9] We do not wish to downplay the validity of the fears and concerns of physicians and their office staffs. However, we must weigh the following: (1) everyone in society should now be considered to be HIV-infected until proven otherwise (this is the principle behind today's *universal precautions*); (2) the actual risk of HIV infection from needlestick and other exposures continues to be clarified by relevant data; (3) prompt post-exposure administration of AZT offers at least the theoretical possibility of preventing postexposure infection; and (4) physicians retain the right to request HIV antibody testing prior to elective procedures.

Fears of HIV transmission should not be dismissed as irrational, yet these fears should be manageable in practice.

Lack of Financial Support

Generally young, often unestablished financially, and frequently uninsured or underinsured, HIV infected patients may lack adequate financial support for comprehensive medical care. Insurance companies are reluctant to issue new policies and may try to cancel existing ones. Patients without insurance soon owe large sums to pharmacies, laboratories and hospitals. Available insurance often consists of Medicaid, and as recent reviewers noted: " 'Medicaidization' jeopardizes access to office-based primary care because of very low reimbursement rates."[10] Caring for large numbers of uninsured or underinsured HIV-infected patients can be a financial liability to one's practice.

South Carolina physicians are fortunate in two respects. First, DHEC has taken an aggressive posture toward providing baseline laboratory services for HIV-infected patients. Ours is one of the few state laboratories offering certain staging tests (such as the CD4 count) as a clinical service to HIV-infected patients. Second, South Carolina became one of the first states to receive the Medicaid waiver for HIV infection. The significance of this waiver is that HIV-infected patients who meet the medical eligibility criteria can receive Medicaid benefits at 300% of SSI (that is, if their income is no greater than three times the Federal Benefit Rate). Eligibility can be determined by contacting the area Community Long Term Care Office of the State Health and Human Services Finance Commission. In brief, current medical eligibility criteria are: (l) a diagnosis of AIDS; or (2) CD4 count equal to or less than 500/cmm with symptomatic HIV infection documented by at least two specific complications.

Uninsured or underinsured patients should be steered toward all possible funding sources. A comprehensive, county-by-county guide of services for HIV-positive patients is available from DHEC (Table 3). Hospital social workers, local DSS offices, PALSS, and other agencies are valuable sources of information and advice. Physicians should also be aware of the DHEC Retrovir Program, designed to make AZT available to medically-indigent patients. Funding for this program has sometimes been inadequate to meet the demand; physicians can ascertain its current status by calling the Columbia office (737- 4040).

In summary, lack of financial support is a significant problem but merely a facet of a larger societal issue: the need to provide medical care to the uninsured and underinsured. We believe that the financial risk should be distributed among all physicians to the greatest extent possible. It is society's prerogative to judge the medical profession according to its collective response.

Lack of Support Services

The social stigmas surrounding HIV infection are all too familiar. Most patients desire to keep their infections a private matter especially during the earlier stages. The physician may come to feel that he or she is the primary (or even the only) source of psychosocial support.

TABLE 3

GUIDES TO OBTAINING SUPPORT SERVICES FOR CARE OF HIV-INFECTED PERSONS IN SOUTH CAROLINA

SHARING: Statewide HIV/AIDS Resources and Information Network Guide

This is a comprehensive guide specifically "intended to assist people with AIDS and people infected with HIV to obtain needed services." It contains both statewide and county-by-county listings. To obtain a copy, write to: HIV/AIDS Division, Bureau of Preventive Health Services, S.C. Department of Health and Environmental Control, 2600 Bull Street, Columbia, SC 29201. The telephone number is (803) 737-4110.

PALSS—Palmetto AIDS Life Support Services of South Carolina

Patients can be referred to PALSS for a wide range of services including information about available resources. The central office is located in Columbia; the address is P.O. Box 12124, Columbia, SC 29211. The toll-free telephone number is 1-800-868-PALS; the Columbia office is (803) 799-PALS.

Community Long Term Care Program of the State Health and Human Services Finance Commission

This office can be contacted to determine the eligibility of patients for the community long term care AIDS/ARC waiver. The central office is located at 2221 Devine Street, Columbia, SC 29205; the telephone number is (803) 253-6309.

Miscellaneous

Many agencies, organizations, churches, and support groups offer specific services to AIDS/HIV patients. For a comprehensive listing, we recommend consulting the manual, *SHARING,* cited above.

This need not be the case. Again, patients should be encouraged to take advantage of available support services. These are listed, county-by-county, in the DHEC manual (*SHARING*). Patients may find the PALSS and other telephone hotlines to be extremely useful (Table 3). Support groups for patients and for their friends and relatives are cropping up, especially in the larger cities. "Case management," a concept being explored at several levels, has two components: social management and medical management. The PALSS model, for example, features a structured approach whereby specially-trained social workers help patients find solutions to problems as they arise.

Early in the course of the infection, the physician should ascertain the strengths and weaknesses in the patient's own social support system. The physician should determine the extent of the patient's desire for confidentiality. Finally, the physician should offer to help the patient break the news to family, friends, employers, church congregations and social support groups at the appropriate time.

In summary, HIV-infected patients have numerous and psychological needs but physicians need not "go it alone" to meet these needs.

Phobias Toward Persons in High Risk Groups

Males of homosexual or bisexual orientation comprise the largest portion of HIV-infected patients, followed by IV drug users. For different reasons, physicians may be reluctant to relate to such persons.

We believe that exclusion of patients from one's practice on the basis of sexual orientation is highly irrational. It is unlikely that any physicians other than obstetricians/gynecologists do not already have homosexual or bisexual males in their practices. Among the lessons of the AIDS/HIV epidemic is that most physicians urgently need to become more comfortable and adroit at discussing sexual issues with all of their patients.[11]

We hold the following generalizations about male homosexuality to be valid: (1) most persons have little or no choice about a sexual orientation established early in life; (2) male homosexuality is poorly understood but surprisingly prevalent throughout the world; and (3) few glib generalizations accurately describe its heterogenous population except for a disproportionately great contribution to society's cultural and esthetic values. That physicians may recoil from IV drug users is more understandable. Illicit IV drug use implies criminal behavior, and IV drug users tend to avoid regular, ongoing medical care.

Unfortunately, IV drug users are today's fastest-growing HIV-infected population. Heterosexual activity is well-known to be a risk factor for HIV infection among drug users.[12] IV drug users often transmit HIV to persons who have no risk factors apart from heterosexual activity. In South Carolina, the relative risk for black women is especially high. Thus, none of us can ignore the implications of IV drug abuse in the context of this pandemic.

Dealing with IV drug users often requires special techniques and facilities. Physicians must be non-judgmental and must take advantage of community resources. Active listening to IV drug users rewards physicians with privileged, unique insights into one of society's most urgent, costly and poorly-understood problems.

In summary, the major risk factors for HIV infection are widespread in our society. To exclude patients on the basis of these risk factors is to exclude a major portion of humanity.

Lack of Information

Even physicians who deal almost exclusively with AIDS/HIV infection have difficulty

TABLE 4

SOURCES OF NEW INFORMATION ABOUT AIDS

- Standard peer-reviewed journals
  - *JAMA*
  - *The New England Journal of Medicine*
- Specialty and subspecialty journals
  - *Annals of Internal Medicine*
  - *Pediatrics*
  - *Journal of Infectious Diseases*
    - numerous others
- Public health agencies
  - *Morbidity and Mortality Weekly Reports* (CDC)
  - *HIV/AIDS Surveillance Report* (DHEC)
- Computer-based data sources
  - AIDSLINE (National Library of Medicine)
  - SCHIN (MUSC and USC libraries)
- Hotlines (especially for patients)
  - PALSS (1-800-868-PALS)
  - Project Inform (1-800-334-7422)
- Other sources
  - Pharmaceutical representatives
  - Textbooks*
  - Monographs**

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* For example, Mandell GL, Douglas RG, Jr, Bennett JE (eds): *Principles and Practice of Infectious Diseases* (third edition, New York: Churchill Livingstone, 1990).

** For example, Volberding P, Jacobson MA (eds): *AIDS Clinical Review 1990* (New York: Marcel Dekker, Inc., 1990).

keeping abreast of the enormous medical literature. And even the most avid journal reader is often embarassed to learn of new developments from the patients themselves, since today's fast-breaking stories often appear first through the public media or even by word-of-mouth.

However, we feel that truly relevant, must-know medical information about AIDS is quickly disseminated through a variety of media. One need not subscribe to such esoteric periodicals such as *The Journal of the Acquired Immunodeficiency Syndromes.* The *Journal of the American Medical Association* and *The New England Journal of Medicine* transmit peer-reviewed conclusions in a timely manner. A few of the alternative sources of information are summarized in Table 4.

The National Library of Medicine maintains AIDSLINE, a database with up-to-date references (including abstracts) on just about any conceivable HIV-related subject. This database is accessible through the libraries at both of our state's medical schools.

In summary, we acknowledge the challenge of keeping abreast of the burgeoning peer-reviewed AIDS/HIV literature. However, essential, bottom-line information is transmitted through a variety of media, making it possible for all physicians to stay at least reasonably well-informed.

Lack of Adequate Referral Patterns

Primary care physicians have conveyed to the SCMA AIDS Task Force the following concern: who will be available when patients begin to get into serious trouble? Without a satisfactory answer, physicians may be understandably reluctant to take on the care of new HIV-infected patients.

Several organizations, including DHEC and the SCMA AIDS Task Force, are exploring models for a team approach to HIV-infected patients. Should South Carolina develop designated regional or statewide referral systems for comprehensive management of this infection analagous to those formerly used for tuberculosis?

To date, no statewide model has emerged. It seems likely that the models will vary among the regions of South Carolina and perhaps also among patient categories (such as risk groups and socioeconomic status). To appreciate the interaction between primary care physicians and consultants, though, it may be useful to introduce at this point a simple, self-explanatory index of patient performance status known as the Karnofsky scale (Table 5).

TABLE 5

THE KARNOFSKY SCALE FOR EVALUATION OF PERFORMANCE STATUS

PATIENT'S PERFORMANCE	STATUS (% OF NORMAL)
Normal, no complaints	100%
Able to carry on normal activities; minor signs or symptoms of disease	90
Normal activity with effort	80
Cares for self; unable to carry on normal activity or do active work	70
Requires occasional assistance but able to care for most of his/her needs	60
Requires considerable assistance and frequent medical care	50
Disabled; requires special care and assistance	40
Severely disabled; hospitalization indicated though death not imminent	30
Very sick; hospitalization necessary; active support treatment necessary	20
Moribund	10
Dead	0

We believe that services available through consultants and tertiary care centers are most valuable to patients with performance status (by the Karnofsky score) in the 30% to 80% range. Prompt diagnosis and treatment of subtle complications during these stages can prolong and enhance the quality of life. Patients performing in the 90% to 100% range can be managed by their primary care physicians with little or no difficulty. It may be useful for such patients and their physicians to establish baselines with consultants and to see consultants periodically (for example, every six to 12 months). Patients performing in the 10% to 20% range generally have poor prognoses despite the most aggressive management strategies. Who is better prepared than today's primary care physicians to help such patients accept the limits of medical technology and the inevitablity of death with grace and dignity?

In summary, we recommend a collaborative effort between primary care physicians and consultants as the best model for most patients. Caring for patients at all stages of HIV infection can be a rewarding professional experience.

EARLY DIAGNOSIS OF HIV INFECTION: SEROLOGIC TESTING

Early diagnosis is desirable not only for the patient's sake but also for the sake of others. A study carried out in South Carolina indicated that only nine percent of sex and/or needle-sharing partners of HIV-positive persons thought that they might have been exposed, and that nearly all of the partners (87%) felt that contact tracing was appropriate.[13] An aggressive approach to early recognition is needed for both management and prevention of HIV infection.

There is no substitute for serologic testing. We believe that testing for HIV antibodies should be considered for all persons with clinical signs or symptoms of HIV infection and also for all non-celibate adults with known risk factors for HIV infection (i.e., homosexuality, intravenous drug abuse, and the receipt of blood or blood products between 1977 and mid-1985). Testing should also be considered for other persons with undiagnosed illness, including the so-called chronic fatigue syndrome. Testing should be considered for older, as well as younger patients, since 10% of AIDS cases have occurred in persons aged 50 or greater.[14]

Like all serologic tests, those available for HIV are imperfect. The commonly-used screening test (the EIA, or ELISA test) is extremely sensitive but may give false-positive results. Physicians should not utilize a laboratory that does not perform a Western blot or other confirmatory test on all positive EIA results. The commonly-used confirmatory test (the Western blot) is more specific, but less sensitive. The Western blot test should not be used as a screening test for persons at low risk of HIV infection, since indeterminate results are not uncommon and cause confusion and anxiety.[15] When serologic results are equivocal, referral to a specialist may be worthwhile.

Supplemental tests include a fluorescent antibody test, available at the DHEC laboratory when results with the EIA and Western blot tests are inconclusive. The polymerase chain reaction (PCR; also known as gene amplification) is a newly available testing adjunct.[16] This powerful technique enables the detection of a single molecule of HIV-encoded DNA in a peripheral blood sample. However, the extreme sensitivity of PCR carries the potential for false-positive results due to specimen contamination.

Serologic testing for HIV should nearly always be performed with the patient's knowledge and informed consent. In some situations (such as pregnancy), it may be desirable to have a standard protocol for informing persons about potential risk factors; informed consent can then be obtained if testing is indicated.[17]

To be sure, situations arise in which the likelihood of a positive test result is quite low and in which the best decision may be to obtain the test without informing the patient. An example would be a teenager with rash consistent with herpes zoster. We know that HIV infection is not rare among American teenagers,[18] but we also know that the mere mention of the "AIDS virus" in such settings can obligate the physician to spend a large amount of unreimbursed time dealing with the anxiety of patients and their relatives. We therefore believe that physicians have the right to use clinical judgment in certain situations in which the probability of positive test results is quite low.

In most situations, however, pre-test counseling is highly desirable. The SCMA AIDS Task Force has recommended the following position statement for the consideration of the Board of Trustees (at the time of this writing, the full board has not yet had the opportunity to consider this statement for its acceptance, rejection or modification):

> The SCMA encourages consent in all situations and strongly recommends written consent (unless written consent will harm the well-being of the patient) or implied consent for HIV testing as a standard of care for all screening purposes.

Physicians should be sensitive to the many issues and controversies surrounding HIV testing, which are beyond the scope of this article.

INITIAL EVALUATION OF THE HIV-INFECTED PATIENT

Initial evaluation should include a complete history, physical examination, and targeted laboratory studies. The extent of laboratory testing will depend to some extent on the presence of symptoms and signs pointing to one or another stage of HIV infection.

Acute HIV Infection Syndrome

Also known as the acute retroviral syndrome, acute HIV infection can present as a mononucleosis-like illness with the variable presence of fever, malaise, myalgias, headache, photophobia, gastrointestinal disturbances and rash (Figure 2). This illness usually occurs within one to six weeks after exposure to the virus. Some patients have evidence of acute neurologic disease: meningitis, encephalitis, polyneuritis, myelopathy, brachial neuritis, and Guillain-Barre syndrome. A recent report of painful swallowing (odynophagia) due to esophageal ulcers illustrates the widening spectrum of this illness.[19]

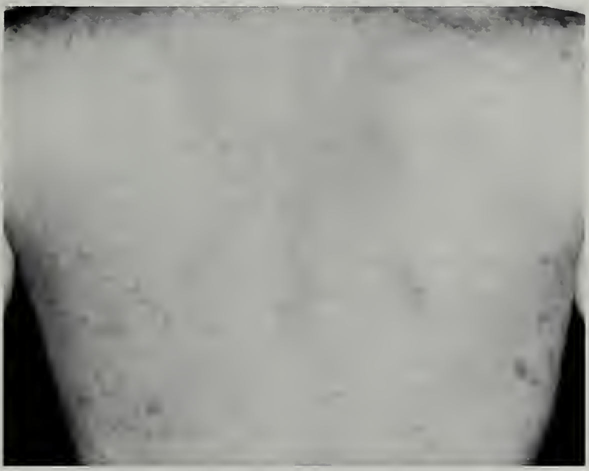

FIGURE 2. Nonspecific maculopapular rash in a febrile patient with the acute retroviral syndrome (see text).

While some authors suggest that the acute HIV infection syndrome is uncommon, prospective studies suggest that one-half or more of all patients experience symptoms during the time of seroconversion: that is, going from antibody-negative to antibody-positive status. Hence, it is important to consider HIV in the differential diagnosis of many acute, self-limited illnesses. Almost by definition, the HIV antibody test is usually negative during this syndrome. Tests for serum p24 antigen or for HIV-encoded DNA (by PCR) are often positive since the virus is actively replicating. The best strategy for most patients is simply to repeat the HIV antibody test (monthly or every other month) with the expectation that antibodies will usually be demonstrable at six months. However, patients in whom the acute retroviral syndrome is suspected should be informed of this possibility so that they can take measures to prevent transmission of HIV to others while awaiting the results of serial HIV antibody tests.

Patients Newly Found to be HIV-positive, who do not have AIDS-defininq Illnesses

Newly-positive patients should be evaluated for symptoms and signs suggesting the likelihood of progression to AIDS within the near future. These include weight loss greater than 10 pounds; unexplained fever, diarrhea, or night sweats lasting more than one month; or the physical findings of oral candidiasis

TABLE 6

BASELINE LABORATORY STUDIES FOR PATIENTS NEWLY-FOUND TO BE HIV-POSITIVE*

I. ESSENTIAL
   CD4 lymphocyte count (quantitative T lymphocyte studies)
   PPD (tuberculin skin test, Mantoux method, 5 t.u.)
   VDRL (RPR) (serology for syphilis)

II. DESIRABLE
   Hepatitis B serology
   Chest x-ray
   CBC, blood chemistry panel
   Women: pelvic examination, Pap smear, pregnancy test

III. OPTIONAL
   Toxoplasmosis serology (IgG IFA)
   Cytomegalovirus serology (IgG FA)
   Beta-2-microglobulin level
   p24 antigen level

*See text

(thrush) or hairy leukoplakia (white, corrugated plaques on the lateral borders of the tongue or buccal mucosa). Generalized lymphadenopathy carries no prognostic significance.

Baseline laboratory studies can be grouped into three categories: essential, desirable, and optional (Table 6). The most important of these is the CD4 lymphocyte count.[20] Some authorities prefer expressing the CD4 lymphocyte count as the percentage of peripheral blood lymphocytes bearing this marker (as opposed to the absolute number of CD4-positive cells). The CD4:CD8 ratio is, in our opinion, far less meaningful.

Other laboratory tests used as markers of prognosis include the serum levels of neopterin and beta-2-microglobulin (both of which reflect immune activation in response to HIV infection) and the serum p24 antigen level. Opinions vary with respect to the usefulness of these tests. In one recent study, it was concluded that the serum level of neopterin or of beta-2-microglobulin should be measured along with the CD4 lymphocyte count.[21] Measuring the p24 antigen level was not helpful. In another study, combining the p24 antigen test with the CD4 lymphocyte count was prognostically useful.[22]

TABLE 7

PROGNOSTIC IMPORTANCE OF THE CD4 LYMPHOCYTE COUNT: RATE OF PROGRESSION TO AIDS*

	CUMULATIVE INCIDENCE OF PROGRESSION TO AIDS (%)			
INITIAL CD4 COUNT	1 YEAR	2 YEARS	3 YEARS	4 YEARS
<200/cm	31%	54%	76%	84%
200-299	10	26	37	41
300-399	7	7	21	25
>400	0	2	9	18

*Kaplan JE, Spoira TJ, Fishbein, DB, et al: Natural history of HIV infection in homosexual men with lymphadenopathy syndrome—relationship with T-helper cell count. Proceedings of the 28th Interscience Conference on Antimicrobial Agents and Chemotherapy, Los Angeles, California, 23-26 October 1988 (abstract 338).

Crucial Role of the CD4 Lymphocyte Count

The likelihood of progression to AIDS within four years as a function of the CD4 lymphocyte count in homosexual men evaluated during 1982-1983 is shown in Table 7. These and other data confirm the CD4 count as a powerful prognostic test. Although other markers (such as beta-2-microglobulin and p24 antigen levels) may be of additive usefulness, the CD4 lymphocyte count alone should usually suffice. Indeed, all of the SCIDS members responding to our survey indicated that they seldom relied on laboratory markers other than CD4 counts in making clinical decisions.

TABLE 8

RECOMMENDATIONS FOR THE USE OF CD4 COUNTS AS A GUIDE TO BEGINNING AZT (RETROVIR, ZIDOVUDINE) THERAPY AND TO STARTING PROPHYLAXIS AGAINST *PNEUMOCYSTIS CARINII* PNEUMONIA (PCP)

I. DECIDING WHEN TO START AZT
  A. If CD4 count is above 600/cmm, repeat every 6 months.
  B. If CD4 count is between 500 and 600, repeat every 3 months.
  C. If CD4 count is below 500, repeat to confirm; then start AZT at a dose (for adults) of 500 mg/day (100 mg every 4 hours while awake).

II. DECIDING WHEN TO START PROPHYLAXIS AGAINST PCP
  A. If baseline CD4 count is above 300/cmm, repeat every 6 months.
  B. If baseline CD4 count is below 300/cmm, repeat every 3 months.
  C. When CD4 count falls below 200/cmm, institute prophylaxis for PCP.

III. AFTER STARTING PCP PROPHYLAXIS
  There is no clear indication to measuring CD4 counts once PCP prophylaxis has been initiated.

Our recommendations for monitoring CD4 counts as a guide to AZT therapy are summarized in Table 8 and represent a current consensus.[23] One should caution that CD4 counts are subject to some variability (up to 20%), and patients should be discouraged from attaching great significance to small fluctuations. It is wise to use the same laboratory and to take specimens at the same time of day.

CD4 counts are expensive. As mentioned above, we are fortunate in South Carolina that DHEC services make this determination available to medically-indigent patients. Some data suggest that the absolute lymphocyte count (calculated from the routine CBC as the product of the total white blood count X the percentage of lymphocytes in the differential count) correlates with the CD4 count in asymptomatic patients in a general way, as follows: an absolute lymphocyte count greater than 1500/cmm predicts that the CD4 count will be at least greater than 200/cmm, while an absolute lymphocyte count less than 1450 predicts a CD4 count less than 500.[24] Thus, one might use the absolute lymphocyte count as a "poor man's substitute" for the CD4 count when funding cannot be obtained for the latter for whatever reason.

Other Baseline Tests (Table 6)
The tuberculin skin test (PPD) and serologic screening for syphilis (RPR or VDRL) have major therapeutic implications (discussed below). We therefore consider these tests to be essential. Some authors recommend that the PPD be controlled with a battery of antigens to which most persons should respond. However, the "anergy panel" as a control to the PPD has never been validated. Similarly, some authors recommend that an FTA-ABS or other treponemal test for syphilis (such as MHA-TP) should be performed if the RPR or VDRL is positive. However, the FTA-ABS loses specificity when used as a screening test unless the index of suspicion of syphilis on clinical grounds is high.

Hepatitis B serology is desirable, since the hepatitis B vaccine should be recommended for those who are seronegative and who have risk factors to hepatitis B infection. A baseline chest x-ray is useful for later evaluation of pulmonary infiltrates, nodules, and hilar/mediastinal lymphadenopathy. The CBC provides a baseline for anemia, granulocytopenia, and thrombocytopenia which may develop in the course of HIV-infection. Similarly, the blood chemistry panel provides a baseline for such later findings as elevated LDH (an early clue to *Pneumocystis carinii* pneumonia); disturbed liver function (which may have many causes); HIV-related nephropathy (discussed below); and hypoalbuminemia (reflecting nutritional status). The advisability of a Pap smear (HIV-positive women have a high incidence of cervical dysplasia[25]) and a pregnancy test are self-evident.

The presence of antibodies to toxoplasmosis indicates a risk to developing cerebral toxoplasmosis as a late complication (discussed below) but has no therapeutic implications. The presence of CMV antibodies indicates the need to watch closely for early signs of CMV retinitis (also discussed below). The absence of CMV antibodies suggests that blood should be screened for these antibodies prior to administration. The role of beta-2-microglobulin and p24 antigen levels as adjuncts to the CD4 count has already been mentioned.

TUBERCULOSIS AND SYPHILIS: SPECIAL CONCERNS

Tuberculosis
The HIV/AIDS epidemic is one explanation for the leveling off of what was—until recently—a steady decline in the incidence of tuberculosis in the United States. Tuberculosis is present in five to 35 percent of AIDS patients, depending on the patient population. In some developing countries, tuberculosis is increasing almost logarithmically at least in part on account of the HIV/AIDS epidemic.[26] Fortunately, tuberculosis usually responds to drug therapy and may be one of the few truly curable infections in HIV-positive patients.

Studies from various states are remarkably consistent in that clinical tuberculosis in HIV-positive patients precedes the diagnosis of AIDS in about one-half of instances. Therefore, (1) all newly-diagnosed patients with tuberculosis should be tested for HIV antibody; and (2) all newly-diagnosed patients with HIV infection who have positive tuberculin skin tests should receive INH preventive therapy.

The American Thoracic Society has recently issued new guidelines for interpreting tuberculin skin tests. Five millimeters of induration 48 to 72 hours after placing the standard Mantoux test (5 tuberculin units) is now considered to be a positive test result in HIV-positive patients.[27] Such persons should be given INH preventive therapy, 300 mg daily for 12 months. Some authorities recommend that HIV-positive persons whose tuberculin tests are non-reactive should have repeat testing on a yearly basis.

Most active cases of HIV-associated tuberculosis appear to be due to reactivation of previous (latent) tuberculous infection. However, the clinical pattern of pulmonary tuberculosis in this setting often suggests progressive primary tuberculosis; the upper lobe, cavitary infiltrates typical of reactivation disease are uncommon. More common patterns include (1) localized lower and/or mid-lung infiltrates, and/or (2) hilar and/or mediastinal lymphadenopathy. Pleural effusions and miliary patterns of disease also occur. About one-half of all cases of tuberculosis in HIV-positive patients are extrapulmonary.[28] Atypical presentations of tuberculosis include abscesses which may require incision and drainage procedures.[29] Such atypical presentations do not explain, however, the frequent delays in the diagnosis of tuberculosis in HIV-positive patients.[30]

Perhaps surprisingly, standard drug regimens for tuberculosis are usually effective. We believe that patients should receive not only INH (10-15 mg/kg/day up to 300 mg) and rifampin (10-15 mg/kg/day up to 600 mg), but also a third drug (either pyrazinamide [PZA], 15 mg/kg/day; or ethambutol, 25 mg/kg/day) for the first two months of therapy. This recommendation is borne out by the recent report of the development of rifampin resistance during INH/rifampin therapy.[31] The optimum total duration of therapy is not well-defined for these patients. All authorities recommend at least nine months' therapy. Life-long therapy may be advisable at least in some instances.[32] However, the relapse rate among patients who comply with conventional regimens is acceptably low.[33]

Syphilis

The incidence of primary and secondary syphilis in the United States increased by 34% during the 1980s in part because of HIV-related risk factors.[34] Young adults with syphilis should be tested for HIV antibodies (with informed consent) and should be counseled about HIV risk factors.[35]

HIV-positive patients with syphilis should be treated aggressively and followed closely.[36] Beyond this generalization, it must be acknowledged that there are major uncertainties about what constitutes optimum management.

The optimum dose of penicillin required to treat any stage of syphilis has never been determined. Although early syphilis (that is, primary, secondary, and early latent syphilis) usually responds to 2.4 million units of benzathine penicillin G (Bicillin), enough treatment failures occur to warrant follow-up of all patients. There is wide agreement that the optimum dose and duration of treatment of late syphilis including neurosyphilis has never been clarified for any patient population.

Musher and his colleagues recently reviewed the complex issues surrounding diagnosis and treatment of syphilis in HIV-infected patients.[37] Standard serological tests are usually reliable in this setting. However, two cases have been reported in which the VDRL was initially negative during secondary syphilis (secondary syphilis is the one situation in which standard teaching holds that the VDRL is "always" positive). Therefore, HIV-positive patients with rashes or other findings suggestive of secondary syphilis should have follow-up serologic testing if the initial VDRL results are non-reactive.

Conventional doses of penicillin often fail to cure syphilis in HIV-infected patients. Also, early neurosyphilis seems to be common in these patients. A specific relationship between neurosyphilis and HIV infection has been suggested; manifestations include acute syphilitic meningitis (which can present as cranial nerve dysfunction or polyradiculopathy), meningovascular syphilis (with symptoms or signs of stroke) and general paresis.

Musher and colleagues concede that there are no proven regimens for treating syphilis in HIV-infected patients, nor are there guidelines for taking into account the stage of HIV infection and the stage of syphilis. For early syphilis, three doses of Bicillin (2.4 million units at weekly intervals) is the minimum acceptable dosage. An alternative regimen worth considering is ceftriaxone (Rocephin), 500 mg or one gram IV daily or every other day for up to 10 days. An argument can be made that all patients should be followed with serial lumbar punctures (every three months). Persistent reactivity of the cerebrospinal fluid VDRL suggests the need for re-treatment.

GENERAL ADVICE FOR NEWLY-POSITIVE PATIENTS

Patients newly-found to be HIV-positive confront a lifelong, usually fatal infection with unfortunate social implications. The following are ten pieces of general advice.

(1) *Don't give up hope.* The course of HIV infection is extremely variable. Already, much can be done to prolong meaningful life. Although it may not be possible to cure HIV infection within our lifetimes, the possibility of control analagous to the control of diabetes mellitus with a variety of drugs seems well within grasp.

(2) *Take comfort in the current state of medical research.* We know more about HIV already than we do about any other infectious agent. Laboratories both in the United States and elsewhere announce fresh molecular insights at a dazzling pace. If there is but one blessing in the HIV pandemic, it is that the problem struck at a time in which we had in place the technical know-how to begin coping with it.

(3) *Be patient.* All therapeutic advances in HIV disease have come the hard way: through well-done, deliberate clinical trials. We believe that this will continue to be the case. That patients become frustrated by what seems to be the slow rate of clinical introduction of new drugs is understandable. However, past experience has amply taught us the value of carefully-controlled, well-done trials.

(4) *Avoid risk-taking behaviors—for your own sake as well as for the sake of others.* There is no safe sex; only safer sex. That relapse from safer sex practices seems to be frequent is disturbing.[38] Even to the already HIV-infected, unsafe sex practices carry the risk of infection with new, AZT-resistant HIV strains, heavy infection with CMV (which may predispose to Kaposi sarcoma), and possibly infection by other opportunistic pathogens.

(5) *Take advantage of available vaccines.* These include the hepatitis B vaccine (discussed below), annual vaccination against influenza, and the pneumococcal polysaccharide vaccine. We recommend the latter (Pneumovax, 0.5 cc IM) for all patients, since HIV infection appears to be a risk factor for pneumococcal infection and data on serotypes suggest the potential for an important protective effect.[39] Some authorities also recommend vaccination against *Hemophilis influenzae* type B.

(6) *Seek help for emotional problems.* Depression, which can reach suicidal dimensions, is predictably common and understandable. Emotional problems are precipitated or made worse by the numerous dilemmas encountered during interactions with friends, relatives, neighbors, employers and co-workers. Patients should seek help from social workers, support groups, and—when indicated—psychologists and psychiatrists for special counseling.

(7) *Seek help for legal problems.* Discrimination against HIV-positive patients has been well-publicized, and has included such areas as housing, employment, public schools, public accommodations and personal services. Complaints in some of these areas are declining, but new forms of discrimination continue to emerge. As a recent reviewer put it: "Nondiscrimination for persons infected with HIV is consistent with the prevailing sense of justice in America."[40]

(8) *Gain weight.* Weight loss often heralds the onset of clinical deterioration. We have observed that patients who are actually overweight at the time of diagnosis of HIV infection tend to do better. We advise patients to do whatever is necessary to maintain weight, and to gain weight if at all possible. Forget that "thin is in."

(9) *Stay busy.* Remembering the old adage that it's impossible to be busy and depressed at the same time, we advise patients to set goals, to make lists, and to do whatever they can to enjoy and contribute to life. Many physicians freely acknowledge that AIDS patients have taught them a great deal about how to make the most of our common human predicament: life's brevity and frailty.

(10) *Seek regular, ongoing medical follow-up.* It is necessary to accept that HIV-

infection is a life-long, chronic process. It is understandable that many patients will tend to use denial as a first-line defense mechanism. However, even patients who are asymptomatic and who have high CD4 counts at the time of initial diagnosis should see their physicians at regular, scheduled intervals. Patients must maintain an interest in their disease.

FOLLOW-UP VISITS DURING EARLY STAGES OF INFECTION

Even if the patient is entirely asymptomatic and denies psychosocial problems of any kind, regular follow-up visits should be scheduled. At such visits, the history should be explored for symptoms suggesting manifestations of HIV disease (as discussed elsewhere in this article). The patient should be given ample opportunity to discuss emotional, social and financial problems. The patient must understand the physician to be an ally, ready and willing to assist in marshalling community resources.

Perhaps the most urgent aspect of the routine physical examination is an adequate funduscopic examination, looking for early findings of CMV retinitis. Suggestive of CMV retinitis are coalescing patches of white exudate surrounded by hemorrhage and edema which evolve into a "brushfire" appearance. Such findings should prompt referral to an ophthalmologist. It is especially important to view the macula densa ("look directly at the light"), since even small areas of macular retinitis can destroy central vision. Cotton-wool spots (small exudates without hemorrhage) are common and have been attributed to "HIV retinitis." These lesions resemble the cotton-wool spots commonly seen in diabetic and hypertensive patients and usually resolve spontaneously. Toxoplasmosis retinitis also occurs.[41] The routine physical examination should also focus on the skin (looking especially for early Kaposi sarcoma) and oral cavity (looking especially for thrush and hairy leukoplakia).

Various organizations have proposed consensus viewpoints about what constitutes optimum follow-up laboratory testing. We again suggest that tests can be grouped as essential, desirable, and optional (Table 9). The CD4 lymphocyte count is indispensable for reasons already presented. The complete blood count, blood chemistry panel and urinalysis are desirable, but might be omitted in the completely asymptomatic patient if cost is a major consideration. A strong case can be made for obtaining a VDRL (RPR) annually in those patients who remain sexually active.

TABLE 9

LABORATORY TESTS FOR FOLLOW-UP VISITS DURING EARLY STAGES OF INFECTION*

TEST	FREQUENCY, COMMENTS
Essential	
CD4 lymphocyte counts	See Table 8
Desirable	
CBC with differential	Every 6 to 12 months
Blood chemistry panel (SMAC)	Every 1 to 2 years
Urinalysis	Every 12 months
Optional	
Tuberculin skin test (PPD)	Yearly
Serology for syphilis (VDRL; RPR)	Yearly
Pap smear	Yearly

*See text

INITIATION OF AZT (ZIDOVUDINE; RETROVIR)

The most common current consensus holds that AZT should be initiated at a dose of 100 mg every four hours while awake (or 500 mg per day) when the CD4 count is consistently below 500 per cmm. There are a number of limitations in what we know about AZT (Table 10) and some background discussion may therefore be useful.

A placebo-controlled trial established that AZT prolongs survival, decreases the severity of opportunistic infections, and improves the quality of life among HIV-positive patients with relatively advanced disease, at least in the short term. The one-year survival for AZT-treated patients who had AIDS-defining conditions was 86% for those with *Pneumocystis carinii* pneumonia and 70% for those with other conditions, compared to 45% survival for AIDS patients who did not receive AZT.[42]

TABLE 10

WHAT WE KNOW AND WHAT WE DON'T KNOW ABOUT AZT THERAPY IN HIV-POSITIVE PATIENTS

WHAT WE KNOW

1. In patients with AIDS or severe ARC, AZT increases longevity, decreases the morbidity from opportunistic infections, and enhances the quality of life.
2. AZT is useful for patients with HIV-related neurologic disease and thrombocytopenia (but not for patients with HIV-related neoplasms).
3. In patients with CD4 counts between 200 and 500 per cmm, AZT decreases the short-term likelihood of progression to AIDS.
4. AZT-resistant viral strains can be isolated from patients who have been on extended therapy with this drug.

WHAT WE DON'T KNOW

1. Are the benefits of AZT in early disease and the benefits of AZT in late disease additive? Or could the use of AZT in early disease reduce its effect in late disease?
2. What is the long-term toxicity of AZT?
3. What is the optimum dose and dosing interval?
4. Is the emergence of resistant AZT-resistant viral strains of clinical importance?

AZT also has a beneficial effect on HIV-related neurologic disease and thrombocytopenia. On the downside, longer-term follow-up of the patients who received AZT in the initial trial suggests less dramatic benefits. Therefore, much emphasis has been placed on starting treatment earlier in the course of the infection.[43] The observation that AZT has little or no effect on the shedding of HIV in semen reminds us that patients receiving this drug must continue to shun risk-taking behaviors.[44]

AZT was first approved for persons with AIDS-defining conditions or with CD4 counts below 200 per cmm. The recommended dose for adults was 200 mg every four hours (including an early morning dose), or 1200 mg per day. At least 40% of patients (in our experience, a higher percentage) required frequent blood transfusions, and granulocytopenia was also common. Subsequent trials have established that lower doses are equally effective, with much less hematologic toxicity.

When Should AZT be Started?

Two large-scale collaborative trials established that AZT benefits patients with CD4 counts below 500 per cmm. Fewer treated patients, compared to untreated patients, developed AIDS during short-term follow-up (for example, by one year).[45-46] *We do not yet know the true impact of early AZT therapy on long-term morbidity and mortality.*

HIV develops resistance to AZT during therapy. Most HIV isolates from patients treated for six months or longer with AZT show decreased sensitivity to the drug. Resistance seems to develop at a slower rate in asymptomatic patients and in those with high CD4 counts compared to patients with far-advanced disease. Also, lower doses of AZT seem no more likely than the higher doses previously recommended to be associated with the development of resistance. However, by the end of two years of therapy resistant isolates are extremely common irrespective of the dosage regimen.[47] While the full significance of AZT-resistant isolates is unknown, some data suggest that viral mutation precedes clinical deterioration.[48] That many patients become less responsive to AZT over time is now widely recognized.[49]

Some investigators have stated publicly that AZT should be started as soon as HIV infection has been diagnosed, irrespective of clinical status and CD4 counts. We believe this practice to be unwise. In most well-studied models of infectious disease, *in vitro* resistance does in fact predict *in vivo* failure. Therefore, we believe that on starting AZT the patient enters a race between (1) the development of resistant viral strains and loss of efficacy of AZT; and (2) the development and availability of new treatment modalities.

SCIDS members were asked: "At what level of CD4 lymphocyte count do you generally start AZT?" None advocated AZT "at any level if the patient is confirmed to be HIV-positive." The consensus (79% of the respondents) was that AZT should be instituted when the CD4 count is consistently below 500 per cmm. Others (21% of the respondents) advocated waiting until the count fell below 400 per cmm.

We applaud the following editorial com-

TABLE 11

MONITORING AZT THERAPY

I. PATIENT EDUCATION
  A. Nature of side effects: hemoglobin, absolute granulocyte count (ACG), platelet count.
  B. Check CBC in 2 weeks, then monthly for three months, then every 3 months.
  C. Ask about myalgias, GI side effects.

II. DOSE REDUCTION
  A. If hemoglobin is below 8 g/dl, transfuse.
  B. If ACG is less than 750/cmm, reduce dose.
  C. If ACG is below 500, hold AZT.
  D. If thrombocytopenia occurs, investigate.

III. LONG-TERM SIDE EFFECTS
  A. Myopathy and others.
  B. Consider ddI (didanosine) in event of failure.

ment: "the 'golden moment'—perhaps occurring between CD4+ cell counts of 200 and 500 per cubic millimeter—when efficacy may be maximized, toxicity minimized, and the most durable benefit ensured is not yet known."[50]

Monitoring AZT Thrapy

At the current recommended dose (500 mg/day for adults), AZT is not a difficult drug to use. Patients should be educated to take an interest in their hemoglobin levels and absolute granulocyte counts (ACG; the product of the total white blood count X the percentage of neutrophils). It is useful to establish an office flow sheet with the parameters shown in Table 11.

Clinically significant anemia requiring blood transfusion, if it occurs, usually occurs within 12 weeks. Recombinant erythropoetin (Eprex) is now approved for therapy of anemia associated with low erythropoietin levels in HIV-positive patients.[51] Persistent anemia arising later during therapy raises the possibility of parvovirus B19 infection, which is treatable.[52] Granulocytopenia, being less amenable to therapy, is more likely than anemia to be a dose-restricting factor. Severe thrombocytopenia arising during AZT therapy calls for hematologic evaluation (we have observed cases of immune thrombocytopenia and B-cell leukemia in this setting).

Myopathy or myositis is an infrequent complication of AZT therapy but may require discontinuing the drug. Suggestive features include proximal muscle weakness, muscle tenderness, and elevated serum creatine phosphokinase (CPK) levels. Although usually reported in patients receiving AZT for longer than one year, myopathy can also occur early in the course of therapy.[53] Less serious side effects include nausea, vomiting, dyspepsia, and abdominal bloating. The previous recommendation that acetaminophen (Tylenol) should not be used during AZT therapy has been partially retracted; it is now felt that intermittent use of acetaminophen is not harmful. Finally, it should be mentioned that AZT readily crosses the placenta by simple diffusion, and although extensively metabolized by the placenta it appears to reach the fetus.[54] Although pregnancy is generally considered to be a contraindication to AZT, the possibility of judicious use especially during the third trimester is now being explored.[55-56]

In summary, AZT prolongs the duration and quality of life and should be instituted for patients with CD4 counts consistently between 400 to 500 per cmm. We are fortunate that well-designed studies continue to address the many unsettled issues.[57]

PROPHYLAXIS AGAINST *PNEUMOCYSTIS CARINII* PNEUMONIA (PCP)

Pneumonia due to *Pneumocystis carinii*, a microorganism usually said to be a protozoan but which may actually be a fungus, was historically the first AIDS-defining condition to be recognized. This disease (PCP) is the initial AIDS-defining infection in 65% of AIDS patients and eventually develops in over 80% of patients in the absence of prophylaxis. Respiratory failure due to PCP occurs in as many as 20% of hospitalized patients and carries an 80% mortality. For all of these reasons, PCP should be prevented whenever possible.

Prophylaxis against PCP is recommended for patients whose CD4 counts are below 200 per cmm (as summarized in Table 8). In one recent study, the percentage of patients developing PCP within six months varied inversely with the CD4 count: none of 1,371 patients with CD4 counts greater than 351 per cmm; 0.5% of 217 patients with CD4 counts between 201 and 350 per cmm; and 8.4% of 77 patients with CD4 counts below 200 per cmm.[58] Hence, prophylaxis is cost-ineffective for patients with CD4 counts well above 200 per cmm (this point should also be apparent from the data shown in Table 7).

Aerosolized Pentamidine

Aerosolized pentamidine reduces the frequency of PCP and is now commonly recommended although it is less cost-effective than alternatives (see below). The usual dose is 300 mg every 28 days, administered by nebulizer. It should be given, at least initially, by an experienced respiratory therapist. Many patients are later capable of home self-administration. Aerosolized pentamidine and AZT have independent, beneficial effects and combine to make PCP much less common than was formerly the case.[59]

Drawbacks to aerosolized pentamidine include expense, difficulties in administration, and changes in the clinical presentation of PCP should it occur. Patients who develop PCP while on aerosolized pentamidine may have infiltrates in atypical locations such as the upper lobes—which are less likely to receive the drug. Spontaneous pneumothorax may be the presenting manifestation and carries a high mortality rate.[60] Fibrocystic changes on x-ray are more frequent; disease patterns on gallium scans are atypical; and bronchoalveolar lavage is less likely to demonstrate the organism. Transbronchial lung biopsy is especially useful in patients who develop infiltrates while receiving aerosolized pentamidine.[61] Extrapulmonary infection due to *Pneumocystis carinii*, once extremely rare, is now being reported with increasing frequency.[62, 63] It is possible that such manifestations reflect the *in vivo* development of resistance of *Pneumocystis carinii* to pentamidine. Unfortunately, there are no standardized methods to test for such resistance. The recent report of a cluster of PCP cases among elderly adults without predisposing illnesses adds to the suspicion that the spectrum of disease due to this pathogen is widening—perhaps in part because of our wide use of pentamidine and other agents.[64-65]

Trimethoprim-sulfamethoxazole (TMP/SMX)

Recently, there has been renewed interest in low-dose, intermittent TMP/SMX (Bactrim; Septra) as a cost-effective alternative to pentamidine for prophylaxis against PCP. A dose of one double-strength tablet (160 mg of TMP and 800 mg of sulfamethoxazole) given three times weekly has been shown to be effective.[66] In one study, it was even more effective than aerosolized pentamidine.[67] However, 20% to 50% of patients experience side effects such as rash, neutropenia, nausea, and vomiting. It is often possible to "treat through" these side effects. We should not forget that adverse reactions to sulfa drugs (including TMP/SMX) can occasionally be fatal. Nevertheless, we believe that low-dose TMP/SMX is a reasonable alternative to pentamidine for all patients, and should be considered especially when there are cost constraints.

Other Regimens

Pyrimethamine-sulfadoxine (Fansidar), a drug most commonly associated with prevention and treatment of chloroquine resistant malaria (*P. falciparum*), appears to be effective PCP prophylaxis at a dose of one tablet per week. A drawback of Fansidar is its association with the Stevens-Johnson syndrome (fatal cases of which have limited its use as malaria prophylaxis among American travelers). Another effective regimen consists of dapsone, 50 to 100 mg daily. Dapsone causes hemolytic anemia in patients with glucose-6-phosphate dehydrogenase (G-6-PD) deficiency; can affect all blood cell lines (causing anemia, leukopenia, and/or thrombocytopenia); and can cause a variety of skin rashes including bullous eruptions.

DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS OF *PNEUMOCYSTIS CARINII* PNEUMONIA

The onset of PCP in HIV-infected patients is sometimes acute but is more often gradual and is characterized by progressive dyspnea, nonproductive cough, fever, and hypoxia. The now-classic chest x-ray appearance is that of a symmetric, bilateral, finely reticulonodular ("ground glass") infiltrate most prominent in the perihilar regions but spreading out to the lung periphery. Unfortunately, the initial chest x-ray is often normal and the chest x-ray can remain normal in five to 10 percent of patients despite disease progression.

There is wide agreement that a simple, noninvasive test for early diagnosis of PCP would be a welcome addition to clinical practice. Several pulmonary function studies have been evaluated for this purpose. The diffusing capacity is nearly always abnormal but is quite nonspecific. Finding an increased alveolar-arterial (A-a) gradient during exercise seems to be reasonably sensitive and specific.[68] Radionuclide lung scans with gallium 67 citrate are usually positive (up to 85% or even 100%) in patients with normal chest x-rays but are also nonspecific.

All of the aforementioned tests are expensive, time consuming and/or cumbersome. The serum lactic dehydrogenase level (LDH) is usually elevated in patients with PCP. One recent study suggests that PCP is unlikely to be present in patients with normal chest x-rays, normal LDH levels (<200 units/L), normal sedimentation rates, and who do not have mouth lesions (thrush or hairy leukoplakia).[69] We are not yet confident that algorithms based on such observations can be used to determine which patients require attempts to demonstrate the organism.

Pneumocystis carinii cannot be isolated by culture without the use of specialized and usually unavailable techniques. Diagnosis usually depends on demonstrating the organism by special stains. At medical centers where AIDS is highly prevalent, expertise has developed at making the diagnosis using induced samples of expectorated sputum in 25% to 50% of cases. We anticipate that methods utilizing monoclonal antibodies or PCR may facilitate diagnosis using expectorated sputum within the foreseeable future.[70]

In South Carolina at this time, definitive diagnosis of PCP is most often made by microscopic examination of specimens obtained during bronchoscopy—either brushings, transbronchial biopsy (positive in 95% of cases), and/or bronchoalveolar lavage fluid (positive in 90% to 95% of cases). Open lung biopsy is seldom required. To an increasing extent, patients with "classic" PCP by clinical criteria are being treated on a presumptive basis, without bronchoscopy for definitive diagnosis.

We recognize that presumptive therapy of PCP without bronchoscopy is often in the patient's best interests. Still, definitive diagnosis is desirable for several reasons. First, adverse reactions to therapy are common. Second, proof of the diagnosis may become necessary for enrollment in the trimetrexate protocol (see below) should first-line regimens fail. Third, and perhaps most important, other pathogens also cause pneumonia in this setting. Steroids are being used with increasing frequency in the treatment of PCP, and could make pneumonia due to other pathogens much worse in the absence of specific therapy.

A Recommended Approach

Any combination of dyspnea, cough, and fever should be taken seriously. Outpatients with symptoms of short duration may, to be sure, have a self-limited "viral" illness. However, we suggest frequent follow-up visits for such patients. Progression of symptoms or the presence of hypoxia (e.g., arterial $P0_2$ less than 85-90 mm Hg on room air) should prompt further study.

Other pulmonary pathogens in HIV-infected patients include (1) mycobacteria (notably *M. tuberculosis* and MAI); (2) pyogenic bacteria (notably *S. pneumoniae* and *H. influenzae*); (3) opportunistic bacteria (especially *Legionella pneumophilia* and *Nocardia* species); (4) fungi (especially *Cryptococcus neoformans* and *Histoplasma capsulatum*) and (5) viruses (especially influenza virus and CMV). Kaposi sarcoma and lymphoma can also present as pulmonary infiltrates.

We recommend blood cultures in all patients with infiltrates. In HIV-infected patients, blood cultures are positive in up to 80% of cases of pneumococcal pneumonia and in up to 25% of cases of pneumonia due to *H. influenzae*. Blood cultures for AFB and fungi (see above) may sometimes be helpful as well. If the patient is not acutely ill, attempting to induce sputum may be worthwhile (see above). When in doubt, though, we believe that it is best to err toward early bronchoscopy with transbronchial biopsy and/or bronchoalveolar lavage. Diagnosis and treatment of pneumonia in the presence of HIV infection is made even more challenging by the observation that multiple pathogens are often present.

TREATMENT OF *PNEUMOCYSTIS CARINII* PNEUMONIA

Untreated, PCP is almost uniformly fatal. Today's standard treatment is TMP/SMX or pentamidine. Success rates of 60% to 80% have been reported in most series with either regimen. With early diagnosis, even greater success rates (up to 90% or more) seem possible.

Standard Regimens: TMP/SMX vs Pentamidine

All SCIDS members endorsed TMP/SMX as the initial treatment of choice. The dose is 15 to 20 mg/kg/day (based on the trimethoprim component), either IV or orally in four divided doses. Each double-strength TMP/SMX tablet (Bactrim DS or Septra DS) contains 160 mg of trimethoprim; hence the full dose for a 70 kg adult would be approximately eight double-strength tablets daily (two Q.I.D.). Gastrointestinal absorption of TMP/SMX is nearly complete and therefore the oral route should be used whenever possible. Treatment should be continued for at least 21 days. Unfortunately, adverse reactions occur in up to 55% of patients; these include rash, fever, leukopenia, thrombocytopenia, hepatitis and nausea. At present, there is a trend toward "treating through" milder reactions. The potential for severe reactions to the sulfonamide component (such as Stevens-Johnson syndrome and aplastic anemia) should, of course, be kept in mind.

Pentamidine—historically the first effective therapy for PCP and still the drug of choice prior to the AIDS epidemic—is the standard alternative regimen to TMP/SMX. The usual recommended dose is 4 mg/kg/day given as a single IV dose over at least 60 minutes. Recently, there has been interest in using lower doses of pentamidine (e.g., 3 mg/kg/day) to reduce the risk of adverse reactions. These include hypotension, fever, leukopenia, hepatitis, hypoglycemia, pancreatitis and azotemia. In one study, nephrotoxicity occurred in 76% of patients and hyperkalemia in 24% of patients; thus, renal function and the serum potassium (or, conveniently, the SMA-7) should be monitored closely.[71] Aerosolized pentamidine does not appear to be as effective as IV pentamidine for therapy, as opposed to prophylaxis.[72,73]

Dapsone-trimethoprim for Milder Cases

For mild-to-moderately severe first episodes of PCP, a regimen of dapsone (100 mg/day as a single dose) plus trimethoprim (20 mg/kg/day in four divided doses) is promising. I*t is imperative to screen patients for glucose-6-phosphate dehydrogenase (G-6-PD) deficiency prior to starting dapsone*, since this drug can cause hemolytic anemia and methemoglobinemia in G-6-PD deficient patients. In a recent controlled trial, dapsone-trimethoprim was as effective as TMP/SMX for mild-to-moderately severe cases of PCP (the main criterion for such cases being an arterial $p0_2$ greater than 60 mm Hg on room air).[74]

Other Regimens

Severe cases of PCP unresponsive to either TMP/SMX or pentamidine pose a major therapeutic problem. Trimetrexate is the usual drug of choice. This agent is not FDA-approved but is available on a compassionate-plea basis (the toll-free number is 1-800-537-9978). Leukovorin must be given to reduce the likelihood of bone marrow suppression, and one must also watch closely for the appearance of fever and rash.

Other available regimens include clindamycin (900 mg IV every eight hours) plus primaquine (30 mg PO every 24 hours), which appears to be effective and well-tolerated in small studies. Primaquine causes hemolysis in G-6-PD deficient patients. Diarrhea (including severe colitis), fever, and rash are relatively common during therapy with clindamycin.

Steroids as Adjuvant Therapy for Moderately Severe Cases

Within the past year, there has been renewed interest in early use of corticosteroids as adjuvant therapy for moderately severe cases of PCP. The rationale is that many patients deteriorate during the first four days of therapy, possibly because destroyed organisms elicit an inflammatory response which in turn impairs pulmonary function. Recently-reported controlled trials suggest that steroids not only prevent early clinical deterioration but also improve survival.

The optimum dose and duration of steroids is not well-established. One recommended regimen consists of prednisone 40 mg twice daily for five days, then 40 mg daily for five days, then 20 mg daily for the duration of treatment of PCP.[75, 76] Methylprednisolone (Solu-Medrol) IV can be substituted in the same dose for patients unable to take prednisone by mouth. Another regimen is to use a higher dose of methylprednisolone (40 mg IV every six hours) for a shorter duration (seven days in the absence of relapse).[77]

It seems reasonable at this time to give steroids to patients with documented PCP with arterial $p0_2$ less than 70 mm Hg.[78-79] If steroids are to be given, it is desirable to prove the diagnosis (by transbronchial biopsy, if necessary) and to exclude other pathogens—notably, *Mycobacterium tuberculosis* and *Cryptococcus neoformans.* That such pathogens can cause an interstitial pneumonia resembling PCP cannot be overemphasized.[80]

DIAGNOSIS OF OTHER COMPLICATIONS: A SYNDROME APPROACH

We have discussed Pneumocystis carinii pneumonia in some detail because it is the most common AIDS-defining condition, in the absence of prophylaxis. Familiarity with the CDC's current list of AIDS-defining conditions (Table 12) provides a background for evaluating specific problems as they arise. Most of these conditions present as subacute or even chronic problems, rather than as acute episodic disease. There is usually adequate time for diagnostic procedures and/or referral to a regional medical care facility.

Full discussion of all HIV-related complications far exceeds the scope of this article. We shall address some of the more common complications using a syndrome approach (Table 13). Emphasis will be placed primarily on differential diagnosis and on the problems likely to present as medical emergencies. We shall begin with problems likely to be encountered relatively early in the course of HIV disease and conclude with problems usually encountered during the terminal stages of infection.

Progressive Generalized Lymphadenopathy

More than 50% of HIV-positive patients develop enlargement of peripheral lymph nodes. Usually, the course is benign: nothing is necessary other than serial observation, and the nodes tend to atrophy as the disease progresses.

Mycobacterial infection (*M. tuberculosis* and others), Kaposi sarcoma, and lymphoma including Hodgkin's disease are the major diagnoses to exclude. Clues suggesting the need to proceed to lymph node biopsy or aspiration include localized or rapid enlargement; constitutional symptoms such as fever and weight loss; and mediastinal or hilar lymphadenopathy (which are not part and parcel of the usual benign generalized lymphadenopathy in HIV-infected patients).

Oral Lesions: Candidiasis and Hairy Leukoplakia

These common findings in the oral cavity have already been mentioned. The cottage cheese-like plaques of thrush (pseudomembranous candidiasis) are familiar to all physicians. Oral candidiasis can also present as flat, atrophic, erythematous plaques; like thrush, these are found primarily on the soft palate, tonsils and buccal mucosa.

It is usually unnecessary to obtain a culture to confirm the diagnosis, since most patients respond to therapeutic trial. Nystatin (5 cc q.i.d.) is probably the most cost-effective therapy. Clotrimazole troches (Mycelex troches, one three to five times daily) are more convenient for ambulatory patients. Ketoconazole (Nizoral), 200 mg to 400 mg per day can be used for refractory cases.

Hairy leukoplakia—a white, corrugated or filamentous plaque most frequently seen on the lateral borders of the tongue as already mentioned—seems to be unique to HIV infection and is thought to be caused primarily

TABLE 12

PRESENT AIDS-DEFINING CONDITIONS, AND DIAGNOSTIC CRITERIA FOR ADULTS*

Candidiasis of esophagus, lungs, or tracheobronchial tree	Gross inspection by endoscopy or of autopsy, or microscopy (Histology or cytology) on a specimen obtained directly from tissues affected (including scrapings from the mucosal surface), not from culture
Coccidiodomycosis (disseminated or extrapulmonary) ***Cryptococcosis*** (extrapulmonary) ***Herpes simplex virus*** (chronic ulcers [>1 mo. duration] or bronchitis, pneumonitis, or esophagitis) ***Histoplasmosis*** (disseminated or extrapulmonary)	Microscopy (histology or cytology), culture, or detection of antigen in a specimen obtained directly from the tissues affected or a fluid from those tissues
Cryptosporidiosis (chronic intestinal [>1 mo. duration]) ***Cytomegalovirus disease*** (other than in liver, spleen, or lymph nodes) ***Cytomegalovirus*** retinitis ***Isosporiasis*** (chronic intestinal [>1 mo. duration]) ***Kaposi sarcoma*** ***Lymphoma*** (Burkitt's; immunoblastic; or primary in brain) ***Pneumocystis carinii pneumonia*** ***Progressive multifocal leukoencephalopathy*** ***Toxoplasmosis*** (of brain)	Microscopy (histology or cytology)
Tuberculosis (disseminated or extrapulmonary) ***Mycobacterium avium complex or M. Kansasii*** (disseminated or extrapulmonary) ***Mycobacterium, other species or unidentified species*** (disseminated or extrapulmonary) ***Salmonella septicemia, recurrent***	Culture
HIV encephalopathy	Clinical findings of disabling cognitive and/or motor dysfunction interfering with occupation or activities of daily living, in the absence of a concurrent illness or condition other than HIV infection that could explain the findings. Methods to rule out such concurrent illness and conditions must include cerebrospinal fluid examination and either brain imaging (computed tomography or magnetic resonance) or autopsy.
HIV wasting syndrome	Findings of profound involuntary weight loss (more than 10% of baseline body weight) plus either chronic diarrhea (two or more loose stools per day for 30 or more days, intermittent or constant) in the absence of a concurrent illness that could explain the findings (e.g., cancer, tuberculosis, cryptosporidiosis, or other specific enteritis).

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*From the Acquired Immunodeficiency Syndrome Adult Confidential Case Report form (CDC 50.42A [rev. 6-89]). The case definition for children under 13 years of age is substantially different (see text).

by the Epstein-Barr virus. The lesion is usually asymptomatic and treatment is therefore unnecessary.

Skin Lesions: Herpes Simplex and Kaposi Sarcoma

Many common skin conditions such as seborrheic dermatitis, psoriasis, folliculitis, herpes zoster, alopecia and xerosis tend to be more frequent and/or more severe in HIV-positive patients (Table 13). Molluscum contagiosum, a distinctive papular lesion caused by a DNA poxvirus, can be extensive and disfiguring. Cryptococcosis and histoplasmosis can cause lesions resembling molluscum contagiosum, and therefore biopsy for confirmation is desirable. Low CD4 counts correlate with both widening of the spectrum and increased severity of the skin manifestations of HIV infection.[81]

Prolonged mucocutaneous ulceration caused by either of the herpes simplex viruses (HSV) ranks among the AIDS-defining conditions (Table 12). These ulcers typically occur around the mouth, perineum or rectum, often become superinfected, and can be extremely disabling. Although the location and appearance of herpetic ulcers is reasonably distinctive, documentation by viral culture is worthwhile since prolonged therapy with acyclovir (Zovirax) is usually necessary. Acyclovir-resistant HSV strains pose a therapeutic problem.

Patients are often anxious that minor skin blemishes could presage Kaposi sarcoma—a common AIDS-defining condition especially in homosexual men. To be sure, the first lesions of Kaposi sarcoma may be unimpressive red macules or plaques. However, Kaposi sarcoma usually evolves quickly into widespread skin and mucous membrane involvement by red or purple plaques, papules and nodules. Biopsy should be obtained to exclude other possibilities, since a wide range of skin conditions can mimic the gross appearance of this previously-rare tumor.

Bleeding and Petechiae: Immune Thrombocytopenia

Approximately five to 15 percent of HIV-infected patients develop thrombocytopenia (platelet count below 100,000 per cmm). Occasional patients develop severe thrombocytopenia (platelet count below 20,000) with widespread petechiae and active bleeding. This is the syndrome of ITP (previously idiopathic thrombocytopenic purpura and now usually known as immune thrombocytopenia) in which platelets are destroyed by antibodies. Treatment of this disorder is problematic, and referral to a hematologist will be indicated in most instances.[82]

Constitutional Symptoms: Fever, Night Sweats, Fatigue, and Weight Loss

Nonspecific constitutional symptoms often signify clinical deterioration. Such symptoms as fever, night sweats, intermittent diarrhea and weight loss (the wasting syndrome) can perhaps be explained by HIV disease *per se*, especially since they occur primarily in patients with CD4 counts below 200 per cmm. However, these symptoms obligate the physician to consider other possibilities.

Prior to the diagnosis of AIDS, nonspecific constitutional symptoms may appear weeks or even months prior to the diagnosis of *Pneumocystis carinii* pneumonia. Late in the course of AIDS, constitutional symptoms occur with an almost monotonous regularity. The wasting syndrome is now included among the AIDS-defining conditions (Table 12).

In patients with unexplained fever, blood cultures should be processed not only for bacteria but also for AFB (mycobacteria) and fungi. Gram-negative rod bacteremia was found to be present in five percent of hospitalized HIV-positive patients in a recent series, and carried a 38% mortality rate despite appropriate therapy.[83] Bacteremia due to *Salmonella* species was known to be associated with T-lymphocyte deficiency prior to the AIDS epidemic and is relatively common in HIV-infected patients. Most patients survive the initial episode, but maintenance therapy is required.[84] *S. aureus* has been the most common cause of bacteremia in HIV-infected patients in some areas and carries a high mortality rate.[85]

Disseminated mycobacterial disease—whether due to *M. tuberculosis* or one of the atypical mycobacteria (primarily *M. avium*)—often presents with fever, night sweats,

TABLE 13

ABNORMAL FINDINGS IN HIV-POSITIVE PATIENTS: CONSIDERATIONS

FINDING	DIFFERENTIAL DIAGNOSIS
Fever, sweats, chills, malaise	*Acute:* bacterial infection; secondary syphilis *Subacute or chronic:* HIV; tuberculosis, atypical mycobacterial disease (MAI), lymphoma
Localized skin lesions: rash, alopecia, nodules, maculopapules, vesicles, other	*Specific to HIV:* multifocal Kaposi sarcoma *Opportunistic infections with increased frequency or severity:* varicella-zoster (shingles), herpes simplex, molluscum contagiosum, condylomata acuminatum, fungal infections *Other skin conditions with increased frequency or severity:* seborrheic dermatitis, psoriasis, itchy folliculitis, xerosis
Purpura	Immune thrombocytopenic purpura
Generalized lymphadenopathy	HIV disease, secondary syphilis, CMV, Kaposi sarcoma, tuberculosis
White lesions, oral cavity	Candidiasis (thrush); hairy leukoplakia
Dark, red-to-purplish lesions, oral cavity	Kaposi syndrome
Ulcers, oral cavity	Aphthous stomatitis; herpes simplex virus; CMV
Odynophagia (pain on swallowing)	Candida esophagitis; herpes simplex virus; aphthous ulcers, Kaposi sarcoma, CMV
Loss of vision (total or partial)	CMV retinitis; syphilis; HIV; toxoplasmosis
Retinal hemorrhages and exudates	CMV retinitis; toxoplasmosis
Nonproductive cough, dyspnea, chest tightness, rales and ronchi	PCP; tuberculosis, MAI; CMV; Kaposi sarcoma; bacterial or fungal infection including cryptococcosis
Diffuse interstitial infiltrate	PCP; tuberculosis; cryptococcal or other fungal infection; lymphocytic interstitial pneumonia; bacterial pneumonia; viral and nonspecific pneumonitis
Localized pulmonary infiltrates	Bacterial pneumonia; tuberculosis; cryptococcal pneumonia; PCP
Pleural effusion	Kaposi sarcoma; bacterial pneumonia; tuberculosis; PCP (uncommon)
Mediastinal lymphadenopathy	Tuberculosis; MAI; lymphoma
Anorexia, nausea, vomiting, diarrhea	Parasitic intestinal disease; MAI; bacterial infection; CMV; HIV; acalculous cholecystitis
Hepatosplenomegaly	Viral hepatitis; MAI; tuberculosis; toxoplasmosis; lymphoma
Anorectal pain or ulcerations	HSV; CMV; fissures, fistulas, and abcesses (including intersphincteric abscess); lymphoma, Kaposi sarcoma
Non-healing anal or genital sores or nodules	Consider Kaposi sarcoma and squamous cell carcimona in addition to sexually-transmitted diseases
Headache, weakness, seizures; encephalopathy; myopathy; neuropathy; radiculopathy;	Cryptococcal meningitis; toxoplasmosis; lymphoma; progressive multifocal leukoencephalopathy; HIV; tuberculosis, herpes simplex encephalitis
Memory loss, depression, mood changes	HIV encephalopathy (in addition to the above considerations)
Intracranial mass lesion by CT scan	Toxoplasmosis; lymphoma (primary or metastatic); progressive multifocal leukoencephalopathy; cryptococcosis and other fungal infection; nocardiosis, CMV; herpes simplex virus; infection; HIV infection and nonspecific gliosis

diarrhea and weight loss. In patients with diarrhea, AFB smears and cultures on stool may provide the diagnosis. If done by appropriate methods (such as the DuPont ISOLATOR or BACTEC systems), these are nearly always positive in patients with disseminated *M. avium* infection and are frequently positive in disseminated tuberculosis as well.[86]

Occasionally, deep fungal infections present as disseminated illnesses with nonspecific constitutional symptoms in HIV-positive patients. In our region, histoplasmosis is the major consideration. Serology may be helpful, but fungal cultures of blood, bone marrow, or other tissues or fluids offer the best chance to prove the diagnosis. In overwhelming cases, *Histoplasma capsulatum* organisms can be seen within peripheral blood leukocytes on randomly-obtained blood smears.[87] Serology for coccidiodomycosis should be obtained in persons who have traveled in endemic areas, such as the southwestern United States.[88]

Fever of undetermined origin—defined by the classic Petersdorf-Beeson criteria of a febrile illness of greater than three weeks' duration with documented temperature above 101 degrees F on several occasions and with no diagnosis after one week of hospitalization—is a relatively common problem in HIV-infected patients. Most patients eventually prove to have an opportunistic infection. In a recent series of 42 patients with "true FUO," mycobacterial infections accounted for 57% of such episodes and only 17% of patients remained undiagnosed.[89] Bone marrow aspiration and biopsy was the most useful diagnostic procedure.

Finally, neoplasms can present with nonspecific constitutional symptoms in HIV-infected patients. Kaposi sarcoma is the most common and has received the most publicity, but there is also a definite association between HIV and non-Hodgkins lymphoma. Primary lymphoma of the central nervous system was recognized early in the AIDS epidemic and carries a poor prognosis.[90] Lymphoma can also present as a difficult-to-diagnose peripheral lymphatic or extralymphatic tumor. There is an emerging consensus that Hodgkin's disease and many other tumors are more common in HIV-infected patients and are more likely to have an aggressive natural history.

Headache: Rule out Cryptococcal Meningitis

Acute bacterial meningitis occasionally complicates HIV infection, and can be caused by *Listeria monocytogenes* as well as the more common meningeal pathogens such as the pneumococcus (*S. pneumoniae*) and *H. influenzae*.[91] Headache lasting longer than one week should raise the clinical suspicion of cryptococcal meningitis.

Cryptococcal meningitis occurs in about 10% of patients with AIDS, and carries a high case-fatality rate (approximately 60%). Onset is usually insidious, with some combination of headache, nausea, fever, altered mental status and seizures. More than 80% of patients have positive blood cultures for *Cryptococcus neoformans*, and cryptococcal antigen can usually be demonstrated in serum. However, lumbar puncture remains the cornerstone to accurate, early diagnosis.

Patients with papilledema or localizing neurologic symptoms or signs should have a CT scan of the brain prior to lumbar puncture, since intracranial mass lesions (discussed below) are relatively common. Studies on CSF should include cryptococcal antigen determination, fungal culture, and India ink preparation (a positive India ink test suggests a poor prognosis).

Initial therapy of cryptococcal meningitis remains somewhat difficult, and referral to a regional medical center may be advisable. Amphotericin B continues to be the drug of choice for initial therapy. The most frequent dose is 0.5 mg/kg/day (or 1 mg/kg every other day), for a total of 1.5 to 2.0 grams. Many physicians prefer placement of a central catheter (of the Hickman, Broviac, or Porta-Cath varieties) prior to starting amphotericin B. Such catheters are not only convenient for the patient but also for medical personnel, since maintaining peripheral venous access during long-term amphotericin B therapy usually becomes problematic. We believe that medical personnel should be spared the need to start "extremely difficult IVs" when this can be avoided, due to the risk of occupational exposure to HIV.[92] Use of flucytosine in combination with amphotericin B is somewhat controversial due to the risk of hematologic toxicity.

Therapy of cryptococcal meningitis in HIV-positive patients is seldom, if ever, curative. Prevention of relapse requires life-long maintenance therapy for which amphotericin B was previously the only alternative. The recent introduction of fluconazole (Diflucan) represents a major advance. This imidazole compound is well-absorbed from the gastrointestinal tract, is highly bioavailable, and readily crosses the bloodbrain barrier. Hence, fluconazole is now the drug of choice for maintenance therapy. Fluconazole seems to be less effective than conventional regimens for initial therapy (at least at the doses studied thus far), and therefore is not recommended for initial therapy except in extremely early cases.[93]

Loss of Vision: CMV Retinitis

We have previously mentioned the need for funduscopic examination at each office visit, looking for the tell-tale clues (hemorrhages and exudates) of CMV retinitis (Figure 3). Referral to an ophthalmologist is usually desirable for confirmation, as the diagnosis is made on clinical grounds.

Ganciclovir (Cytovene) is the drug of choice. Given sufficiently early, it usually arrests CMV retinitis; however, it must be continued indefinitely. In one large series, disease was unilateral in 58% of patients at the time of presentation, but the other eye became involved in 15% of patients while receiving ganciclovir.[94] Ganciclovir must be given intravenously. Since therapy must be indefinite, placement of a permanent indwelling central venous catheter is nearly always indicated.

Adverse reactions to ganciclovir include neutropenia, thrombocytopenia, liver function test abnormalities, headaches, anorexia, myalagias and disorientation. Unfortunately, ganciclovir and AZT have additive hematologic toxicity which becomes severe or life-threatening in 82% of instances.[95] Therefore, patients who need ganciclovir should be considered for alternative anti-HIV drugs (such as ddI; see below). Another limitation is the development of resistance. Foscarnet and other investigational drugs are being studied as alternatives.

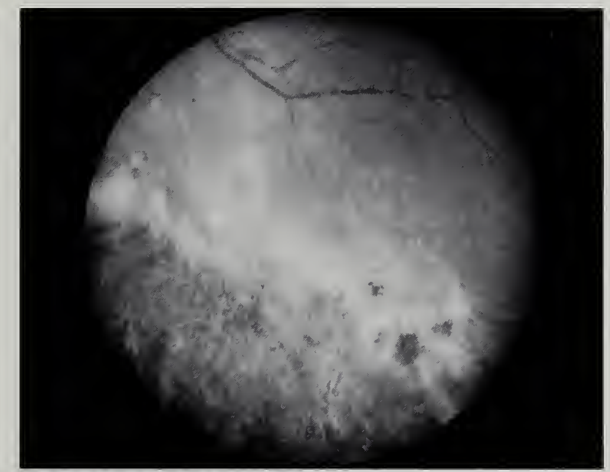

FIGURE 3. "Brushfire" coalescing exudates with hemorrhage involving the macula densa in a patient with CMV retinitis.

Generalized Neurologic Dysfunction: HIV Encephalopathy

Neurologic symptoms lead to the initial diagnosis of AIDS in about 10% of patients and eventually develop in at least 40% of patients. Objective evidence of neurologic dysfunction eventually develops in nearly all patients.

Approximately 90% of patients with AIDS develop evidence of cognitive, affective, or psychomotor neurologic dysfunction. Such deterioration tends to be underdiagnosed, since the change from one office visit to the next can be subtle. Brief neuropsychological screening batteries are being developed; if validated, these may become a useful adjunct to clinical practice.[96]

Neurologic deterioration can have many causes (Table 13), one of which is primary HIV infection of the white matter of the central nervous system. Two distinctive syndromes of HIV encephalopathy are currently recognized: early and late.

Early HIV encephalopathy presents as a slowing of mentation with some combination of memory loss, difficulty concentrating, affective and behavioral changes, and—on examination—hyperreflexia, hypertonia, tremor, frontal release signs and ataxia. Late HIV encephalopathy presents as more severe mental disturbances with marked psychomotor impairment, cognitive loss, and abnormal behavior with—on examination—some combination of weakness, tremor, seizures and neglect.

Both the conventional CT scan and magnetic resonance imaging (MRI) are helpful in diagnosis. In early HIV encephalopathy, some degree of cerebral atrophy is apparent in up to 90% of patients; in late disease, this is usually marked. MRI scanning is less sensitive but more specific than conventional CT scan in early disease, showing damage to the subcortical white matter. In late disease, such changes are again marked. None of these changes are specific to HIV infection, and other causes must be excluded (Table 13).

AZT seems to be of at least some benefit in HIV encephalopathy, and some authorities recommend higher-than-usual doses (i.e., replacing today's standard dose of 500 mg per day with up to 1200 mg per day if tolerated) to assure adequate penetration into the brain substance.

Localized Neurologic Dysfunction

HIV infection is associated with a wide spectrum of localized neurologic disease. MRI scanning seems to be more sensitive than CT scans for demonstration of localized intracranial pathology.[97] Referral to a neurologist is often useful to help pinpoint the pathology and formulate a differential diagnosis.

Early in the course of the illness, several neurologic syndromes can be the presenting manifestations of HIV infection. These include aseptic meningitis (as part of the acute retroviral syndrome); the Guillain-Barre syndrome; and a chronic inflammatory demyelinating neuropathy. Later in the disease, up to 40% of patients will develop at least some symptoms of peripheral neuropathy.

The most common late peripheral neuropathy is a distal, predominantly sensory polyneuropathy with pain and numbness in a stocking distribution (e.g., burning soles). Myelopathy (with pathologic changes in the spinal cord) associated with gait disturbance and weakness in the lower extremities also occurs. Bowel and bladder function may be impaired.

Intracranial mass lesions (Table 13) usually occur as late manifestations. In most series, the order of frequency has been: toxoplasmosis; primary lymphoma of the brain; progressive multifocal leukoencephalopathy (caused by a papovavirus and thus far refractory to therapy); and such specific infections as tuberculosis and cryptococcosis. Patients with multiple ring-enhancing lesions sometimes receive empiric therapy for toxoplasmosis prior to consideration of brain biopsy. Referral to a specialist is usually desirable in the management of such lesions.

Upper Gastrointestinal Disease

Esophageal candidiasis presents as painful swallowing (odynophagia) and is the initial AIDS-defining illness in about three percent of patients. This diagnosis is suggested by the combination of (1) a characteristic cobblestone appearance of the esophagus on esophagram (barium swallow) and (2) response to specific therapy (ketoconazole, 200 to 400 mg daily).

Specific diagnosis of other esophageal diseases may require endoscopy. Considerations include herpes simplex virus infection (multiple, deep ulcers); cytomegalovirus infection (large, shallow ulcers); Kaposi sarcoma and other tumors; and reflux esophagitis. The stomach can be involved by Kaposi sarcoma (up to 25% of all cases with this tumor, although frequently asymptomatic), lymphoma, CMV infection, and other processes including ulcer and gastritis; all of these may require endoscopy for diagnosis.

Right upper quadrant pain associated with fever and elevated alkaline phosphatase raises several possibilities: acalculous cholecystitis, papillary stenosis, and sclerosing cholangitis. Special studies including ultrasound evaluation of the gallbladder and extrahepatic bile ducts may suggest one or another diagnosis. CMV and/or *Cryptosporidium* are frequent causes of biliary tract pathology. Abnormalities of liver function tests are extremely common, and raise numerous possibilities. These include viral hepatitis (hepatitis viruses and CMV), drug toxicity, MAI infection, Kaposi sarcoma, tuberculosis, lymphoma, and a wide array of less common infections.

Small and Large Intestinal Disease

Intestinal disease is extremely common, especially during the late manifestations of the disease. A complete evaluation of diarrhea would include bacterial cultures for enteric pathogens including *Campylobacter* species; assay for *Clostridium difficile* toxin; AFB stain and culture (a positive AFB stain on stool suggests MAI infection; *Cryptosporidium* is also AFB-positive); evaluation for ova and parasites; blood cultures, esophagogastroduodenoscopy (EGD), and colonoscopy with biopsy (looking especially for CMV). To what extent such a complete evaluation should be carried out remains problematic.

On the one hand, a recent decision analysis suggests that for nonbloody diarrhea of more than one month's duration, a minimum intervention strategy (i.e., symptomatic therapy with diphenoxylate hydrochloride [Lomotil]) might be the most cost-effective approach.[98] On the other hand, recognition of specific pathogens holds at least the potential for targeted therapy.

One study showed that cryptosporidia or microsporidia were present in 70% of patients with HIV infection associated with diarrhea and weight loss. Thus, treatment of these infections would be useful.[99] *Cryptosporidium* has been the most problematic pathogen. Unfortunately, no drug regimen has thus far been shown to be clearly effective, perhaps because this parasite maintains a reservoir in the gallbladder.

Cytomegalovirus (CMV) infection of the gastrointestinal tract is being recognized with increasing frequency. Symptoms include dysphagia, diarrhea, and abdominal pain. Although endoscopic findings are sometimes unimpressive, erosions and ulcers are seen in nearly three-fourths of patients.[100] Preliminary data suggest that ganciclovir therapy benefits patients with CMV colitis.[101] If confirmed, these data suggest that more aggressive efforts should be made to document the etiology of abdominal pain and diarrhea.

Kidney, Fluids, and Electrolytes

Hyponatremia is common (up to 40% of AIDS patients), but is usually modest. Adrenal insufficiency (Addison's disease) is present in less than five percent of patients but is a treatable cause of general deterioration. Clues include hyponatremia, hyperkalemia, mild nonanion gap metabolic acidosis, hypovolemia, renal salt wasting, and impaired renal function.

Patients with advanced HIV disease are at risk of renal disease due to a wide variety of exposures: drugs (both illicit drug use and agents such as amphotericin B and aminoglycoside antibiotics); opportunistic infections (including MAI and fungal infections); and tumors. Although still somewhat controversial, one must be aware of a new renal disease: HIV-nephropathy.

More than 100 cases of HIV-nephropathy have now been reported. This entity may occur in previously asymptomatic patients. It is more common in men than in women and in blacks than in whites. Clinical features include large kidneys, heavy proteinuria with the nephrotic syndrome, mild hypertension, and—in most cases—rapid progression. In one recent series, acute renal failure occurred in 74% of the affected patients.[102] Pathology includes injury to both glomeruli and tubules, both of which have been found to contain HIV proviral DNA in biopsy or autopsy specimens.[103]

SOME SPECIFIC COMPLICATIONS: PROBLEM PATHOGENS

In the preceding section, we have attempted to provide an overview of the major complications of HIV infection along with an approach to diagnosis. Specific therapy of opportunistic infections continues to evolve (Table 14). We can anticipate that further advances will improve prognosis, but will also change the spectrum of disease manifestations.[104] Here, we shall discuss two problem pathogens—MAI and CMV—in some detail because of therapeutic dilemmas often arising late in the course of the illness.

Mycobacterium Avium-intracelluare Infection (MAI)

The heterogeneous group of mycobacteria often referred to as the *Mycobacterium avium-intracelluare* complex contains two major species: *M. avium* and *M. intracelluare*. Old synonyms included "Group III atypical mycobacteria" and "the Battey bacillus." Before the AIDS epidemic, MAI bacilli were best known for pulmonary infections resembling tuberculosis in patients with underlying lung disease. Disseminated, extrapulmonary disease was extremely rare.

In HIV-infected patients, localized pulmonary infection due to MAI is uncommon but disseminated infection occurs with monotonous regularity. Such infection is present at the time of diagnosis in about four percent of AIDS patients; is made clinically in 18% to 29% of patients; and can be demonstrated at autopsy in more than one-half of patients. The causative microorganism is usually *M. avium* rather than *M. intracelluare*. This point is clinically significant, since *M. avium* is less sensitive than *M. intracelluare* to such standard drugs as streptomycin, rifampin, and ethambutol.

The most common clinical syndrome is sustained bacteremia with progressive weight loss, high-grade fever, chills, and diarrhea. Anemia and neutropenia are common. Blood cultures for AFB using quantitative methods (such as the DuPont ISOLATOR system) usually show high-grade bacteremia (that is, many colony-forming units per ml of blood). As noted previously, AFB smears and cultures on the stool are often positive as well. At autopsy, quantitative cultures of spleen, liver, and lymph nodes have yielded up to 10^{10} organisms per gram of tissue.

Other syndromes of MAI infection, which can overlap with the disseminated syndrome described above, include: chronic diarrhea and abdominal pain with MAI invasion of the bowel wall; chronic malabsorption with weight loss; and extrahepatitic biliary obstruction caused by periportal lymphadenopathy.

Disseminated MAI infection is often a late manifestation, and the advisability of aggressive drug therapy remains a subject of debate. We believe that the decision to treat MAI in patients who have undergone a long, arduous clinical course with numerous complications, and who appear to have a limited prognosis, should be individualized. A body of opinion holds that in many patients MAI infection is a marker of far-advanced, essentially terminal AIDS. Therefore, why treat aggressively especially when drug therapy for MAI involves multiple, potentially toxic agents?

Recently, arguments have been made that therapy should be more aggressive, at least in some patients. An Australian experience, in

TABLE 14

OPPORTUNISTIC INFECTIONS IN HIV-INFECTED PATIENTS: CURRENT THERAPY AND RECENT DEVELOPMENTS

PATHOGEN	CURRENT THERAPY	RECENT DEVELOPMENTS*
Fungi		
Thrush (oral candidiasis)	Nystatin; Clotrimazole; ketoconazole	Fluconazole
Candida esophagitis	Ketoconazole amphotericin B	Fluconazole
Cryptococcus neoformans	Amphotericin B (see text)	Fluconazole for prevention of relapse
Protozoa		
*Pneumocystis carinii***	TMP/SMX; pentamidine (see text)	Corticosteriods; Dapsone/trimethoprim (see text)
Toxoplasmosis	Pyrimethamine/ sulfadiazine	Clindamycin/ pyrimethamine
Isosporiasis	TMP/SMX	Pyrimethamine
Cryptosporidiosis	None	
Viruses		
Herpes simplex and herpes zoster	Acyclovir	Vidarabine or foscarnet for resistant strains
Cytomegalovirus	Ganciclovir	Foscarnet
Progressive multifocal leukoencephalopathy	None	
Mycobacteria		
M. tuberculosis	INH, rifampin with PZA or ethambutol	See text
Mycobacterium avium-intracelluare	No proven regimen	See text

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* This list includes both investigational drugs and non-FDA-approved indications for available drugs.

** Currently considered by many authorities to be a fungus rather than a protozoan, but listed here as a protozoan by convention.

which MAI was the presenting illness in 24% of patients, indicated that quadruple drug therapy with rifabutin (not available in this country), clofazamine, isoniazid, and ethambutol cured mycobacteremia in 22 of 25 patients, suggesting that pessimism may be unwarranted.[105] Recently, favorable results were reported with amikacin (7.5 mg/kg IV daily) for four weeks combined with 12 weeks of the following: ciprofloxacin 750 mg twice daily, rifampin 600 mg daily, and ethambutol 1000 mg daily. There was decreased mycobacterial load (as assessed from quantitative blood cultures) and systemic symptoms.[106] Long-term follow-up studies of patients treated with such regimens are needed.

Cytomegalovirus Infection (CMV)

Earlier, we reviewed the usefulness of ganciclovir (Cytovene) for CMV retinitis. A current dilemma is whether CMV is a treatable cause of damage to other organs and of overall deterioration.

Serologic evidence of CMV infection can be obtained in at least 40% of most adult populations and in nearly 100% of homosexual men. In patients with intact host defenses, CMV infection is most frequently asymptomatic yet seems to be lifelong. In HIV-infected patients, CMV can be isolated from a variety of fluids, secretions, and tissues. Positive blood cultures for CMV have been obtained in more than 50% of patients, and CMV infection is extremely common at autopsy.[107] However, in many settings it is difficult to assign to this ubiquitous virus a primary pathogenic role as opposed to a role as colonizer or co-pathogen.

It now seems reasonably clear that CMV can cause esophagitis and colitis in HIV-infected patients. As reviewed above, some preliminary data suggest that ganciclovir is effective and hence efforts to document CMV esophagitis and colitis are worthwhile. CMV is often isolated from bronchial washings, but its importance as a cause of pneumonia is unclear. Other syndromes associated with CMV infection include encephalitis, adrenal insufficiency, and papillary stenosis with sclerosing cholangitis. Hence, the usefulness of ganciclovir has been explored in various settings other than the FDA-approved indication (CMV retinitis). However, in many of these settings the causal role of CMV remains debatable.[108]

A small body of tantalizing evidence suggests that CMV may be a treatable cause of the wasting syndrome that so frequently develops late in the course of HIV infection. This evidence largely consists of unexpected weight gain in patients who were receiving ganciclovir for CMV retinitis or colitis. Noting again the problems associated with ganciclovir (notably, bone marrow toxicity and the need for an indwelling central venous line), wide use of this drug for patients with otherwise-unexplained weight loss, fever, anorexia, and diarrhea cannot be endorsed.[109] Further experience, especially with newer agents such as foscarnet, is awaited with interest.

INFANTS AND CHILDREN: PEDIATRIC AIDS

"Pediatric AIDS" has emerged as a separate topic in the medical literature in part because the manifestations of HIV infection tend to be different from those commonly observed in adults. The CDC maintains a separate case definition for children, using age 13 as the cut-off on the grounds that sexual transmission and drug abuse are uncommon prior to adolescence. To date, nearly four-fifths (78%) of cases of pediatric AIDS have been perinatally transmitted. Prognosis is generally poor.

The diagnosis of HIV infection in newborn infants is complicated by the presence of maternally-derived antibodies. Demonstration of HIV-encoded DNA by PCR may prove to be useful in this setting; the frequency of false-positive and false-negative results needs to be clarified. Manifestations of HIV infection in infants include failure to thrive, chronic or recurrent diarrhea, hepatosplenomegaly, lymphadenopathy, parotitis, and thrush. Compared to adults, CD4 lymphocyte counts are less helpful for estimating prognosis.

Recurrent deep bacterial infections are a common manifestation of HIV infection in both infants and older children. These include primary bacteremia, pneumonia, meningitis, osteomyelitis, and abscesses. *S. pneumoniae*, *H. influenzae*, and *Salmonella* species are often isolated. Another common manifestation is lymphocytic interstitial pneumonitis. HIV encephalopathy causes general impairment of neurologic function including loss of the usual developmental milestones. Classic opportunistic infections such as PCP are less common than in adults but have high case-fatality rates. Kaposi sarcoma is rare.

Placebo-controlled drug trials for pediatric HIV infection are now considered to be almost unacceptable due to the poor prognosis. In May 1990, AZT was licensed for use in children. AZT seems to be less toxic to children compared to adults.[110] As in adults, granulocytopenia is the most important dose-limiting factor. Preliminary data suggest that ddI may also be useful in children;[111] the development of this and other drugs (discussed below) is awaited with interest and anticipation.[112]

A PERSPECTIVE ON THE CLINICAL COURSE: WHAT IS URGENT AND WHAT IS NOT?

It should be obvious from the preceding that in all of its manifestations, HIV infection is a complex, multifaceted disease fraught with numerous controversies. However, many of its troublesome manifestations present as subacute or chronic problems, thereby allowing the primary care physician sufficient time to obtain special studies and/or seek referral to a specialist or medical center.

We have grouped some of the more common manifestations according to what we consider to be the therapeutic urgency (Table 15). The physician should keep in mind a relatively short list of diseases with urgent therapeutic implications: bacteremias and fungemias, tuberculosis, syphilis, PCP, CMV re-

TABLE 15

A PERSPECTIVE ON THE CLINICAL COURSE OF HIV INFECTION: PROBLEMS AND THERAPEUTIC URGENCY

STAGE	PROBLEMS	URGENT?
Early (prior to the diagnosis of AIDS)*	Lymphadenopathy	No
	Thrush	No, but treat
	Thrombocytopenia	Yes—referral usually indicated
	Dyspnea, cough**	Yes—clinical findings can be deceptive; arterial blood gases may be useful to define the diagnostic urgency. Evaluate for PCP especially if hypoxic (e.g., $p0_2 < 85$-90 on room air).
At any stage	Pain on swallowing (odynophagia)	Yes—evaluate and treat for *Candida esophagitis*
	Loss of vision or new retinal lesions consistent with CMV	Yes—referral usually indicated
	Persistent headache	Yes—evaluate for cryptococcal meningitis and/or mass lesion
	Unexplained fever	Urgency depends on acuteness of onset and severity of associated symptoms. Blood cultures for bacteria, fungi, and AFB are usually indicated.
	Pulmonary infiltrates	Urgency depends in part on abruptness of onset of symptoms and arterial $p0_2$; accurate etiologic diagnosis is usually desirable.
	Persistent diarrhea	Can sometimes be managed symptomatically; for diagnostic studies, see text.
Late	Wasting, neurologic deterioration	Consider MAI infection; extent of diagnostic tests and therapy should take patient's wishes into account.

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*That is, patients who have not yet been diagnosed to have an AIDS-defining condition. It should be remembered that patients who are receiving prophylaxis against PCP are likely to present with a different AIDS-defining condition.

**For full discussion, see text discussion of PCP.

tinitis, cryptococcal meningitis, and candida esophagitis. New pulmonary infiltrates often pose thorny diagnostic problems (as discussed earlier in the section on PCP). We recommend liberal use of bronchoscopy especially since an expanding list of pathogens (including newly-appreciated human pathogens such as *Rhodococcus equi*[113]) can cause pneumonia in this setting.

It should be remembered that HIV-infected patients are somewhat more prone to develop the same illnesses as everyone else, including dental abscesses; acute sinusitis; bacterial pneumonia and meningitis; and urinary tract infections. New-onset, non-life-threatening outpatient syndromes are sometimes best approached by using the same diagnostic and therapeutic measures one would use in anyone else, yet insisting on frequent follow-up visits. The possibility of HIV-related opportunistic infection can then be investigated if symptoms fail to respond to conservative management. In summary, these patients need close medical follow-up within the scope of primary care.

Eventually, many patients inexorably deteriorate with some combination of progressive weight loss, neurologic dysfunction, chronic diarrhea, and numerous opportunistic infections. Such deterioration has been correlated with an increasing viral burden in peripheral blood CD4 lymphocytes.[114] It is generally thought that the benefits of AZT—at least when started relatively late in the course of HIV-infection—are time limited. That is, at some point AZT seems to lose its usefulness and patients develop a new array of complications: opportunistic infections, neoplasms, and complications related to HIV itself.[115]

At this stage, it is our feeling that the patient's wishes with respect to further extensive testing and aggressive drug therapy must be taken into account. The physician should keep open the possibility of such treatable and reversible possibilities as tuberculosis and adrenal insufficiency. Meanwhile, the patient's support system should be mobilized to the fullest extent possible. Hospice care is often indicated. The physician may eventually realize that about all he or she can bring to a tragic situation is symptomatic therapy, relief of pain, and compassion. Yet the physician is likely to rediscover something precious: why he or she chose to study medicine in the first place.

HORIZONS IN DRUG THERAPY

At this time, only one drug—AZT—is FDA-approved for primary therapy of HIV infection. We anticipate that the 1990s will bring an array of new drugs designed to attack HIV at different points in its life cycle (Figure 4).

As shown in Figure 4, HIV must first bind to the target cell's CD4 receptor. The virus then enters the cell and releases its outer coat. This allows reverse transcriptase (the enzyme unique to retroviruses) to direct the synthesis of a DNA copy of the viral RNA genome. Another enzyme (integrase) facilitates the integration of the new HIV-encoded DNA into the genetic material of the host chromosome, where it becomes immortalized as provirus. From this new sanctuary, HIV provirus directs the synthesis of proteins and RNA for the assembly of complete virus particles. The assembly process takes place along the cell's cytoplasmic membrane, from which new virus particles bud and escape into the surrounding medium.

Each of these steps is amenable to drug therapy, at least in theory. Many compounds have already been developed, and others are in the planning stage.[116-117] Future "designer drugs" are likely to include (1) inhibitors of the viral regulatory genes that coordinate production of new viral particles; (2) inhibitors of host cell enzymes that participate in the production of new viral particles; (3) destruction of viral RNA by unique cleavage molecules such as "hammerhead ribozymes;"[118] and (4) inhibitors of the viral protease enzyme involved in the final assembly and release of new virus particles along the host cell's cytoplasmic membrane. Here, we shall concentrate on a few selected compounds which have already undergone extensive evaluation in patients (Table 16).

Soluble CD4 (rsCD4)

Earlier, we noted that binding of the virus to the CD4 molecule of target cells is a key initial event. The binding portion of the virus consists of knobs or spikes along its outer

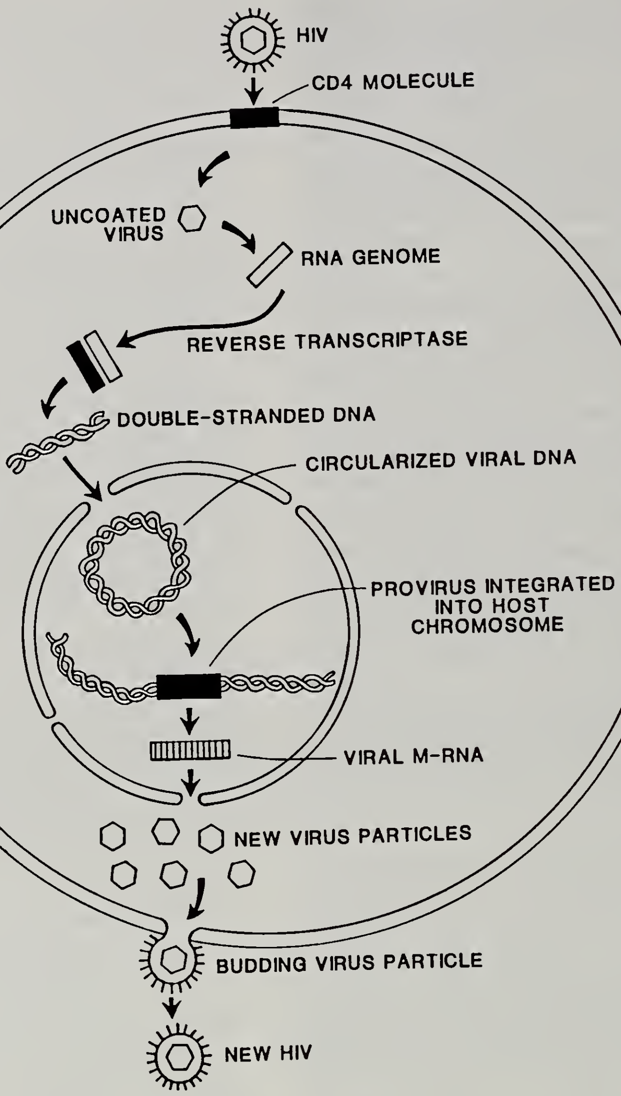

FIGURE 4. The life cycle of HIV within target cells such as CD4 lymphocytes includes entry; reverse transcription of RNA into DNA; integration of viral DNA into the host chromosome; and synthesis and release of new viral particles. Each of these steps is amenable to targeted antiviral therapy, at least in theory (see text and Table 16).

TABLE 16

SOME STAGES IN THE LIFE CYCLE OF HIV AMENABLE TO DRUGS ALREADY BEING ACTIVELY STUDIED

STAGE	POTENTIALLY USEFUL DRUGS
Binding to the CD4 receptor of the target cell	Soluble CD4; Dextran sulfate
Reverse transcription (synthesis of a DNA copy of the viral RNA genome)	AZT (zidovudine; already available); 2', 3'-dideoxyinosine (ddI); 2', 3'-dideoxycytidine (ddC); Others
Synthesis and assembly of new viral particles	Interferon-alpha; Others

membrane, which in turn consist of a protein known as the gp120 antigen (Figure 5). Unfortunately, the peptide sequence of the gp120 antigen changes frequently; were this not the case, development of a vaccine would be simplified.[119] Binding of the viral gp120 antigen to the host cell CD4 receptor molecule has several harmful effects: (1) allowing HIV-1 to enter the cell; (2) blunting the immune response; and (3) promoting destruction of CD4 lymphocytes.[120]

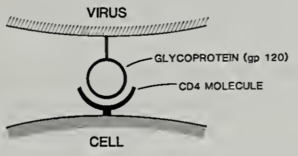

FIGURE 5. Binding of viral gp120 antigen (contained on the outer glycoprotein knobs of HIV) to CD4 receptor molecules of target cells (such as the CD4 or T4 lymphocyte) is the key initial event in HIV infection (see text).

Knowledge of the structure of the CD4 molecule has enabled the synthesis, using recombinant DNA technology, of ample amounts of this protein. Recombinant soluble CD4 (rsCD4) can be made in large quantities and given IM, IV, or subcutaneously. This material would serve as a decoy, since the binding of HIV to rsCD4 results in complexes no longer able to penetrate the host cell. In addition, it is conceivable that rsCD4 could be used as a "carrier" or "targeting" molecule to deliver drugs to the virus or to cells already infected by the virus.[121]

Preliminary trials indicate that rsCD4 is well-tolerated, with no significant clinical or immunologic toxicity in the short term.[122] Bioavailability after subcutaneous injection is excellent, suggesting that it could be self-administered much the way diabetics self-administer insulin.[123] Several alternative CD4 candidate drugs have been developed, including a truncated version of the CD4 molecule carrying the specific gp120-binding domain. The efficacy and long-term safety of rsCD4, however, remain to be established.

New Reverse Transcriptase Inhibitors

Synthesis of DNA and RNA involves the stringing together of four building blocks (nucleotides) with 2',3' phosphodiester bonds. "False nucleotides" are slight chemical modifications of these building blocks capable of binding on one end of the molecule but not the other. Hence, they act as "chain terminators;" they stop the stringing together of nucleotides and thereby arrest DNA or RNA synthesis. AZT is the first such "false nucleotide" to be FDA-approved and marketed for HIV infection, but others loom on the horizon. Now in the advanced stages of clinical investigation are ddI (didanosine; 2'3'-dideoxyinosine) and ddC (3',3'-dideoxycytidine).

Although all three of these compounds (AZT, ddI and ddC) are structurally-similar thymidine analogues, activity and toxicity vary. Preliminary data suggest that viral strains resistant to AZT remain susceptible to ddI and ddC.[124] Through an open-label compassionate release program (1-800-662-7999), ddI is available to AIDS patients with contraindications to further AZT therapy such as adverse reactions or disease progression. Similarly, ddC is available through specific protocols. The major apparent toxicities of both of these compounds are painful peripheral neuropathy and sporadic pancreatitis.

The long-term efficacy and safety of ddI, ddC, and other compounds are unknown. Pancreatitis can be a life-threatening complication if not recognized early.[125] One strategy would be to alternate AZT with either ddI or ddC with the expectation that the toxicity of both drugs would be reduced. Another strategy would be to use two or more reverse transcriptase inhibitors simultaneously with the rationale that one might postpone the emergence of resistant viral strains. We anticipate that both ddC and ddI will eventually be licensed for general use.

Interferon-alpha (IFN-alpha)

Already FDA-approved and licensed for treatment of Kaposi sarcoma, IFN-alpha is active against HIV-1 by an incompletely-understood mechanism. Its action seems to be due, at least in part, to interference with viral assembly and maturation within the host cell without affecting protein synthesis. When IFN-alpha is discontinued, assembly and maturation of viral particles resumes.

Side effects are common. Almost all patients develop flu-like symptoms. Toxicity is dose related, and includes granulocytopenia and disturbances of liver function. In one recent trial, 55% of patients developed granulocytopenia and 45% had elevated liver enzymes. The trial was conducted in patients with CD4 counts greater than 500 per cmm; CD4 counts increased and some patients became culture-negative. IFN-alpha may have some effect in slowing disease progression.[126]

IFN-alpha has been used successfully along with AZT in patients with Kaposi sarcoma. Neutropenia is the major limiting factor. There appears to be an effect on both tumor growth and viral replication.[127]

Use of Multiple Drug Regimens

We predict that by the mid-1990s, multiple drug regimens will be recommended even for the early stages of HIV infection. Rationales for use of more than one drug include (1) synergistic activity against the virus, and (2) delay in the emergence of drug resistance. We also predict that treatment programs are likely to include induction regimens designed to reduce viral burdens followed by maintenance regimens designed to be less toxic.

The promise of potential synergy was demonstrated, for example, by the report of combination therapy with AZT, rsCD4, and IFN-alpha in a human tissue culture cell line (a CD4-positive lymphoblastoid cell line known as the H9 cell clone). One-drug regimens lost effectiveness at 10 to 14 days. Two-drug regimens lost effectiveness at 14 to 18 days. However, use of all three drugs caused near-complete suppression of HIV synthesis for more than 28 days. The authors concluded that "clinical trials of these three drugs in combination should be considered."[128]

SUMMARY

Management of the early stages of HIV infection has become relatively straightforward. Therapy with AZT (Retrovir) should be instituted when the CD4 count is consistently between 400 and 500 per cmm, and prophylaxis against *Pneumocystis carinii* pneumonia should be instituted when the CD4 count falls below 200 per cmm. Although numerous complications punctuate the later course of HIV infection, those requiring emergency intervention are relatively few in number and usually recognizable. On the horizon are new approaches expected to further enhance the duration and quality of life for HIV-infected patients. Caring for HIV-infected patients can be a rewarding clinical experience, and the barriers to providing such care are by no means insurmountable. ☐

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FORT HOST

"Ain't gonna study war no more."
—From "Down by the Riverside"

It was the dean's introductory address on our first day of medical school. "And now . . . I'm going to let you in on a well-kept professional secret." He paused as though to make sure that nobody from the outside world might be listening. Clearly the forthcoming secret should not be shared with the uninitiated. Then he let it fly: "Most of the time, patients get better on their own."

That our bodies usually win without outside help is remarkable, but it is even more remarkable that we never even hear about most of the battles fought in our behalf. Untold hordes of microbes, chemicals and would-be cancers assault the towers of our inner recesses on a daily basis. We nearly always turn them back. We win because of superior weaponry. Host defenses.

Certain writers of national prominence object to society's frequent use of military metaphors when speaking of disease. Why must we *fight* heart disease, *crusade* against cancer, or form *task forces* against AIDS? Why not take a more benign and wholistic posture: all of life is one, there are no friends or enemies, only ecosystems? Why the incessant urge to attack and kill?

As this issue of *The Journal* approaches deadline (February 1, 1991), our national conscience wrestles with war in the Persian Gulf. Fascinated yet troubled, apprehensive yet optimistic, we share with trepidation our President's vision of a new world order. Perhaps someday we will disprove historian Barbara Tuchman's judgment that our species "makes a poorer performance of government than of almost any other human activity."[1] In the meantime we learn once more that military preparedness seems to be the upfront price for security.

I therefore defend the use of the military metaphor—at least when speaking of host defenses, our bulwarks and arsenals against outside invaders. The HIV/AIDS epidemic gives grim witness to what happens without them. For several reasons, the time seems appropriate to display some drawings done for me several years ago by Sue Hilfer, a medical illustrator, of what I choose to call Fort Host (Figure 1). Let us review briefly this remarkable bastion of our daily lives.

Its first walls are tough epithelial barriers. Inside the walls stand three systems which—like the army, navy, and air force of a 20th Century nation—sometimes compete but more often cooperate. These are the neutrophils (polymorphonuclear leukocytes); humoral immunity (B lymphocytes, antibody, and complement); and cell-mediated immunity (T lymphocytes, monocytes, and macrophages). Let us examine each in turn . . . but, whoops, first we must deal with an approaching horde of Enemies (Figure 2).

In this battle scenario, viruses lead the attack. Their plan is to soften Fort Host for the swarms of bacteria behind them. Pyogenic bacteria (such as the streptococci and staphylococci) carry tough shields by which to resist phagocytosis. Toxin-producing bacteria (such as the bacilli of tetanus and botulism) hurl lethal chemicals. Opportunistic bacteria lurk around to take advantage of whatever footholds we will give them. Assorted fungi, parasites, and would-be cancers bring up the rear. Fort Host had better be ready!

When the Enemies reach Fort Host (Figure 3), each defending brigade responds according to assignment. Clockwise from the upper right, we find B lymphocytes shooting cannons of antibodies to neutralize viruses, inactivate bacterial toxins, and opsonize the more virulent bacteria and parasites to facilitate the work of the professional phagocytes (neutrophils and macrophages). We find T lymphocytes and activated macrophages assuming primary responsibility for intracellu-

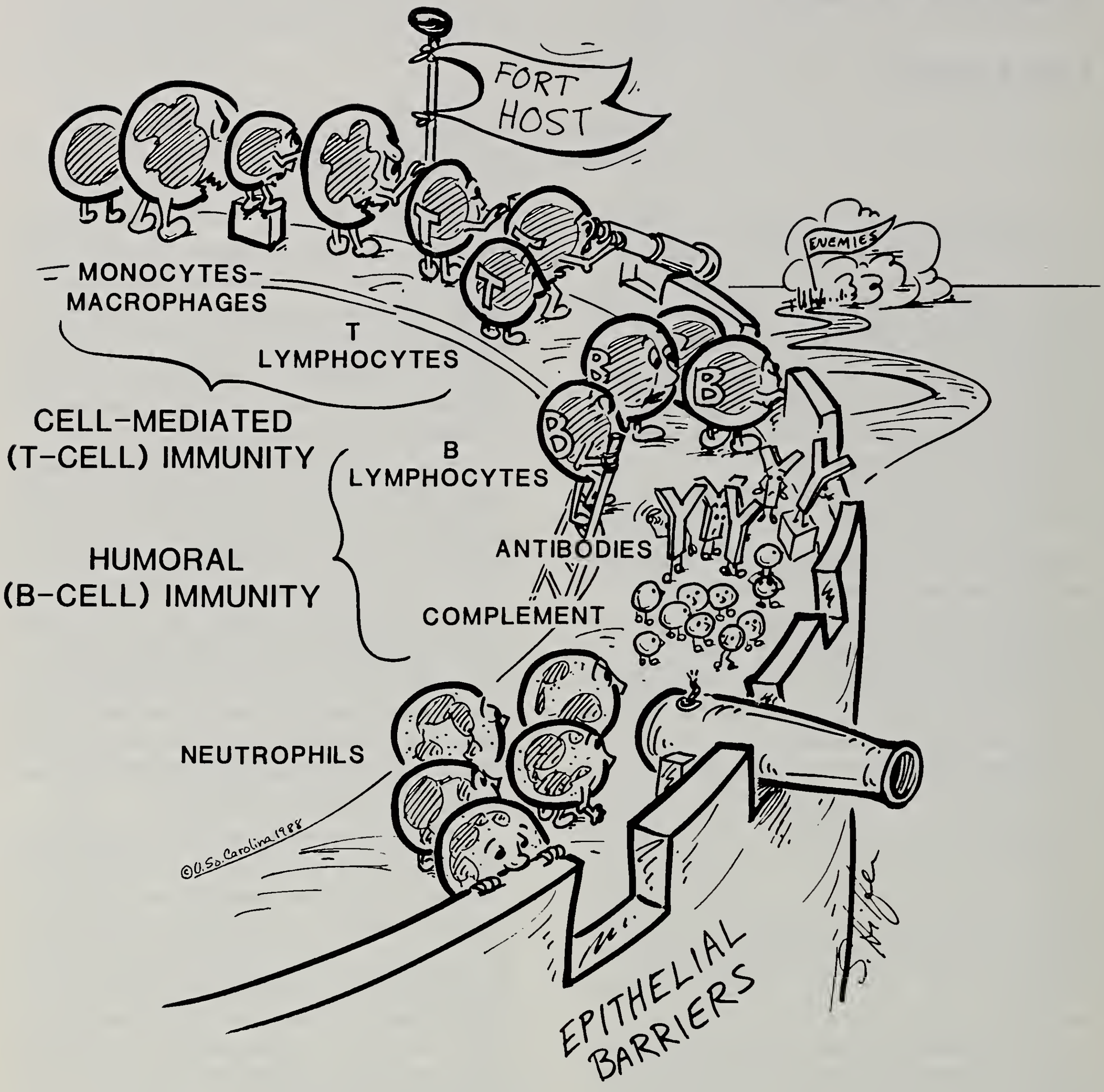

Figure 1. Fort Host

lar bacteria, fungi, parasites, and tumors. We find the ubiquitous complement components plugging the gaps and rallying the troops wherever they can. The Enemies have been routed.

Now . . . after a deep breath, let's go back to our analysis of Fort Host.

If it is astonishing that we know so much already about the molecular biology of HIV infection,[2] it is also astonishing that in the two decades prior to AIDS we learned so much about B and T lymphocyte function. Dr. Robert Gallo of the National Institutes of Health observed: "Had AIDS struck during the 1960s, we would have been in a black box . . . we didn't even know what lymphocytes *do*." Our knowledge came just in the nick of time.

As a sophomore medical student in 1964, I was asked by a pathology instructor: "What

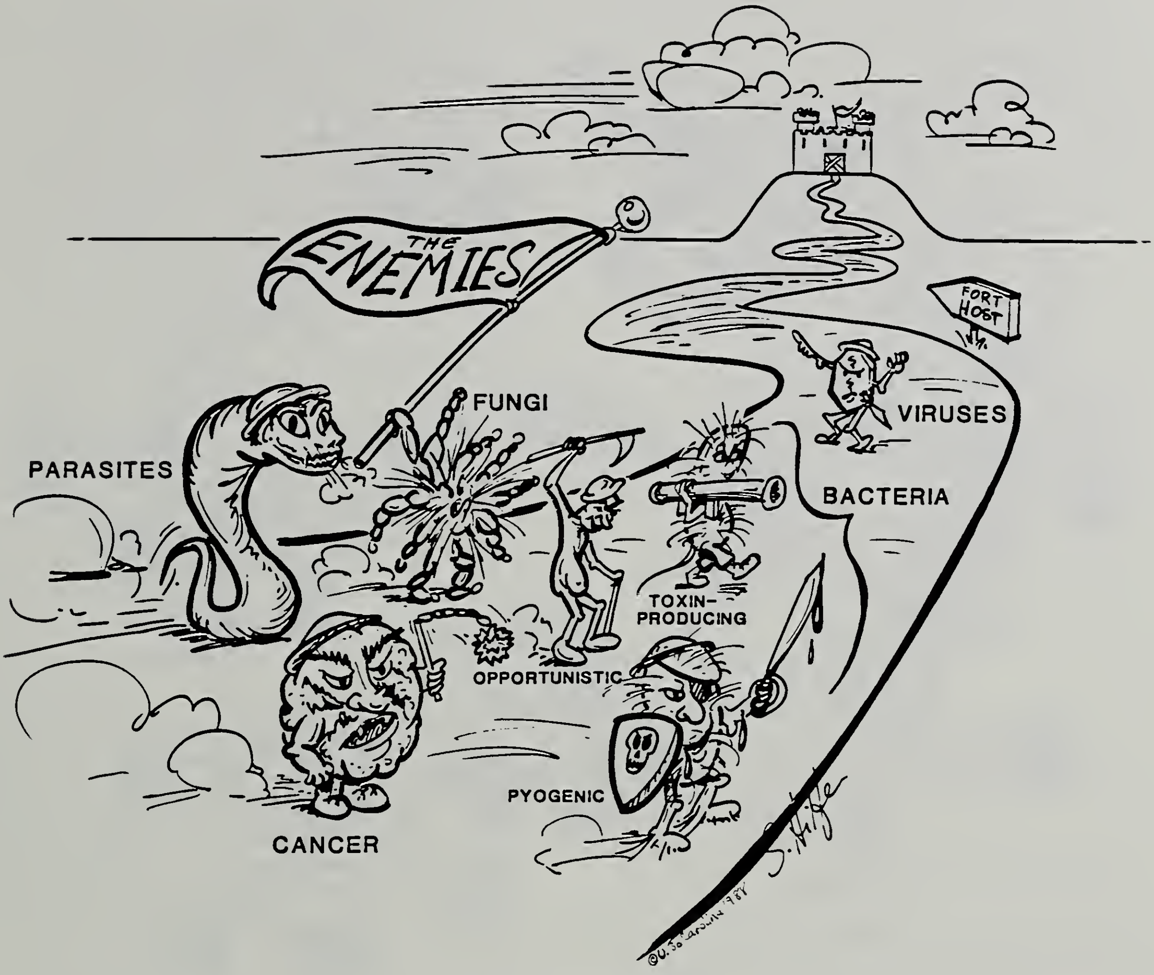

Figure 2. The Enemies

do lymphocytes do?" "Sir," I responded, "they are implicated in antibody synthesis." The answer was good enough, and he passed on to the next student. The whole subject of immunology seemed abstruse. We knew that lymphocytes were involved in both humoral and cell mediated immunity. But all small lymphocytes look pretty much alike, and we had no clues as to which ones did what.

It was around 1970 that medical schools were abuzz with talk about B and T lymphocytes. The concept was that although lymphocytes—like neutrophils and monocytes—originate in the bone marrow, they must go to school for further training (Figure 4). B lymphocytes go to school in the human equivalent of the chicken's *b*ursa of Fabricius. T lymphocytes go to school in the *t*hymus. This simple dichotomy brought coherence to what had previously been a morass of disjointed observations. Immunology suddenly made sense. Its laboratories now attracted streams of bright young investigators. All of this happened just in time for us to recognize what the AIDS/HIV epidemic was all about.

Let us digress briefly into how the key observations were made, for the story makes a strong case for adequate funding of basic biomedical research. It is perhaps no surprise that the key observation about T lymphocytes was made by an established researcher studying the potential role of the thymus in leukemia.[3] Removal of the thymus from newborn mice impaired cell-mediated immunity. However, the discovery of how the bursa of Fabricius affects antibody synthesis offers a classic lesson in serendipitous spin-off. Bruce Glick, a graduate student at Ohio State University, decided to make a doctoral thesis of what happened when the bursa was removed from newborn chicks. Nothing much did, so he freely gave the chickens to a researcher

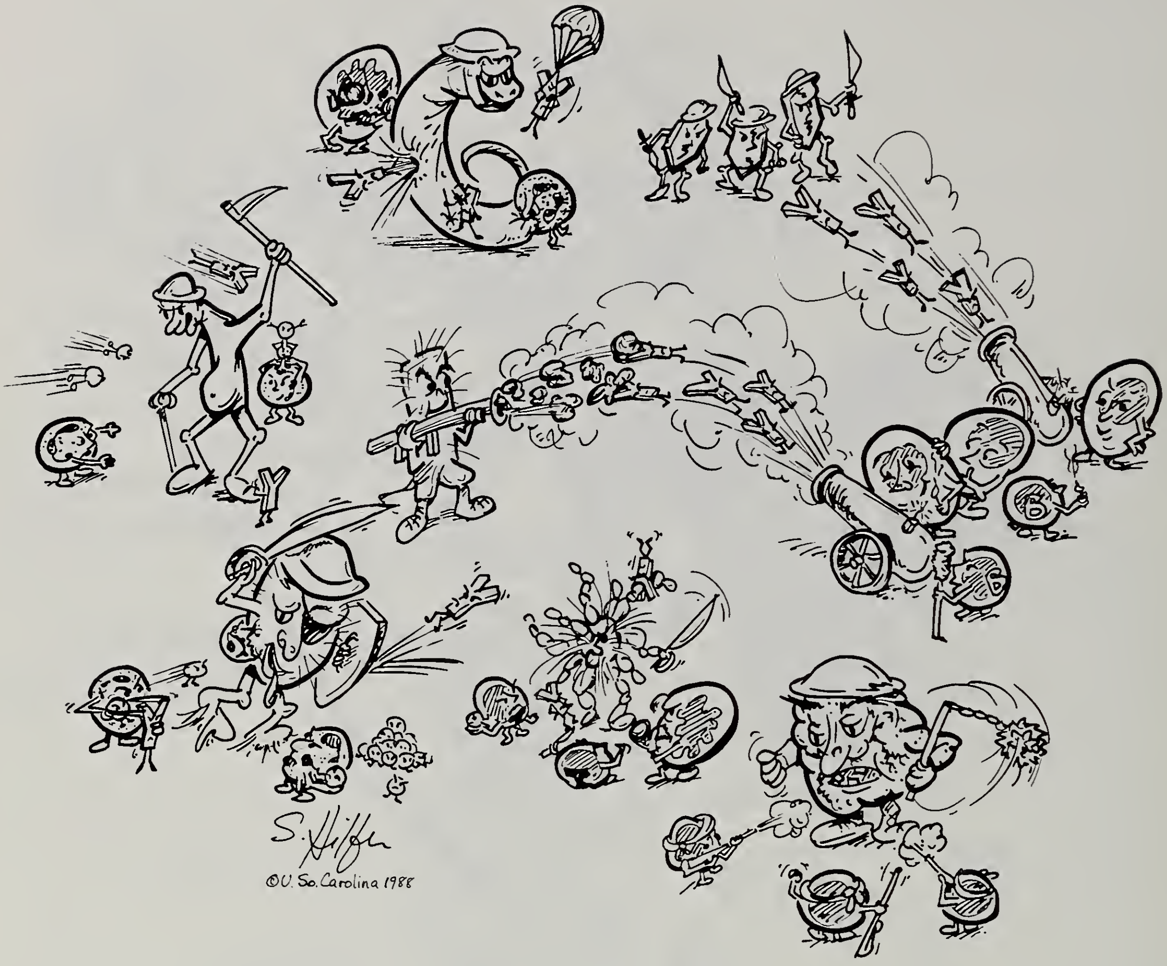

Figure 3. The battle

down the hall who needed more birds to make antibodies against *Salmonella* for his experiments. Glick's Rhode Island Reds and White Leghorns failed to produce antibodies and the rest is history.[4]

The elegant complexity of how lymphocytes seek out and destroy foreign invaders makes Patriot missiles seem like child's play. To make this point, I would ask any skeptical reader to consider just two passages from recent review articles. Having taken these passages from their contexts, I suggest that one make no attempt to follow the meaning—just appreciate the authors' enthusiasm and the systems' complexity.

First, consider this account of the antigen-binding sites in the antibodies formed by the B lymphocyte system:

> To understand how antibodies can differ without violating the rules of the genetic code, we must look at genes coding for the immunoglobulin V regions. . . . *Amazingly enough*, the heavy-chain V region is coded by three separate genes—V, D and J—and the light-chain V region by two genes—V and J. There are 500 to 1,000 different V heavy-chain genes . . . (and) at least 200 different light-chain genes. . . . It is immediately apparent that an antibody combining site consisting of randomly chosen gene products from no fewer than five genes, each of which permits multiple choices, can present quite enormous variability—i.e., 10^3 x 10 x 4 x 200 x 6 (or 5 x 10^7) to a first approximation . . . (*italics mine*).[5]

Next consider this account of how T cells respond to so many different antigens:

> T cell orchestration occurs as the result of a *precisely orchestrated* set of events involving the T3-Ti complex, the 15-kd sialoglycoprotein polypeptide growth factor interleukin-2 (formerly called T-cell growth factor), and the interleukin-2 receptor. Although resting T cells express no receptors for interleukin-2, they have a maximal number of surface antigen-MHC receptors (approximately 40,000 per cell). After the T-cell receptors are triggered by antigen and MHC gene products, the number of surface antigen receptors quickly diminishes, and induction of surface interleukin-2 receptors occurs within hours (*italics mine*).[6]

Let no one say that Fort Host's defenses are crude or primitive!

Let us return to the metaphor. Perhaps the day will come when we no longer need to study war, but it's likely that we'll always need to study defense. I cannot but think that the more we know about host defenses, the better off we'll be. The more we learn about Fort Host, the more we stand in awe.

Several years ago, I watched a prominent investigator show his latest movie of neutrophils engulfing bacteria. I cannot recall the details of the experiments, but I well remember his final sentence—applicable to all components of Fort Host.

He said: "Gee, I'm glad those guys are on our side!"

—CSB

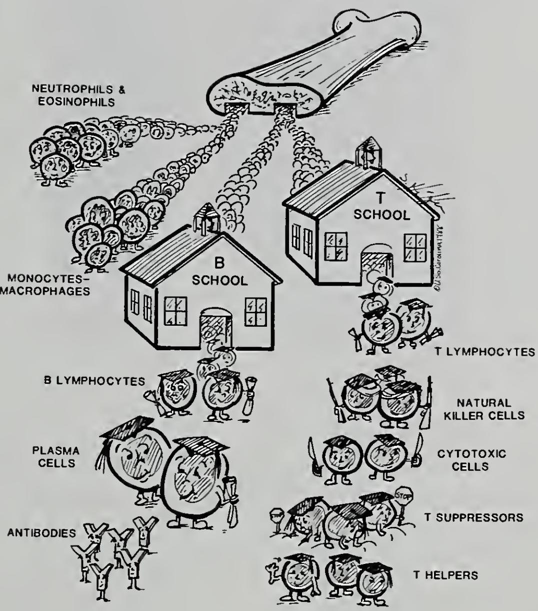

Figure 4. Schools for lymphocytes

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MRI UPDATE

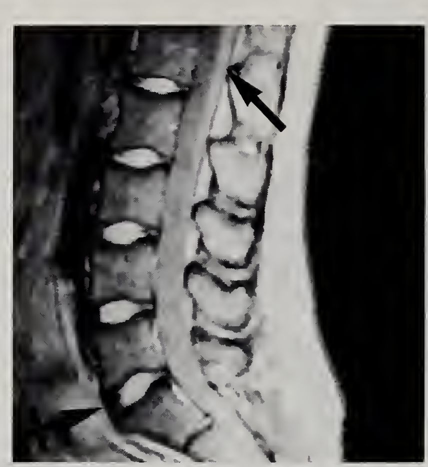

Figure 1

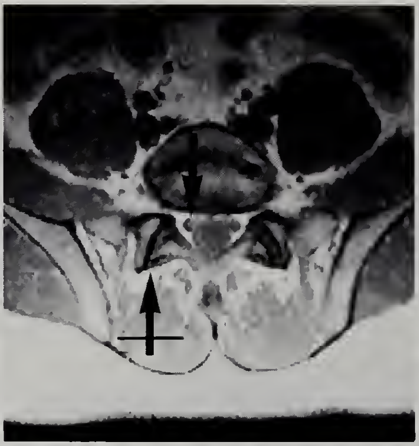

Figure 2

CLINICAL HISTORY: This is a 26-year-old male with back pain and right lower extremity radiation.

FINDINGS: This is an example of a normal study on a young adult. COMMENT: MRI is the screening test of first choice for suspected disorders of the lumbar spine. Notice the clear depiction of the normal L5-S1 disc (figure 1, crossed arrow). The discs of this patient exhibit high signal intensity reflecting normal hydration and none of the discs are narrowed. None of the discs indent the thecal sac which is of intermediate signal intensity and appears as the gray band in the center of the image. The vertebral bodies are homogeneous and free of destructive lesions. The conus medullaris (arrow) is normal. This sagittal image demonstrates the advantages of MRI over other screening modalities. Routine CT scanning will not display the conus medullaris, lesions of which may masquerade as disc herniation. The general area of coverage is superior with MRI. Disc detail is much better displayed with MRI.

The axial image at L5-S1 (figure 2) exhibits delineation of intraspinal detail far superior to that of CT. The right S1 nerve root is clearly displayed (arrow) surrounded by normal perineural fat which is the bright high intensity material in the periphery of the spinal canal. State-of-the-art MR images clearly display the bony anatomy of the lumbar spine including the facet joints (crossed arrow). Degenerative diseases and bony neoplasm are routinely detectable.

MRI involves no ionizing radiation and no intrathecal contrast material is needed. It is a patient-friendly outpatient examination well suited for screening purposes.

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SCMA NEWSLETTER

MARCH 1991

MEDICARE UPDATE

February Medicare Advisory

A February Medicare Advisory has been mailed to physicians by Blue Cross and Blue Shield. Please note that this bulletin provides information to your staff on the new Automatic Response Unit which they can access with a touchtone phone to obtain the latest information on Medicare claims.

This advisory also encourages providers to submit claims electronically; HCFA's strategy is to instruct the carriers to pay electronically submitted claims on time and, when administrative funds are lacking, to "process hard copy claims to the extent possible."

Finally, the Advisory also contains the 1991 HCPCS codes.

MEDICAID UPDATE

Medicaid Eligibility Requirements

Some SC physicians have requested information on the indications of when their patients are eligible for Medicaid. Following is a brief summary of categories and eligibility requirements. If you need additional information, have your patient or office staff contact your local DSS office.

Category	Eligible Population	Income Limits
Pregnant Women & Infants under 185% poverty	Pregnant women and children under age 1.	Based on family size; family of four limited to net income (after child care and other deductions) of $2,066/month.
Children age 1-7 under poverty (Children 1-6 at 133% of poverty. Children 6-7 at 100% poverty)	All children ages 1-7.	Based on family size; children up to age 6 in family of four limited to net income (after child care and other deductions) of of $1,486/month. Children 6-7 in family of four limited to net income of $1,117/month.

AFDC (Aid to Dependent Children)	Must have child in home under age 18. Child must be deprived of support due to a parent's absence, death, incapacity or unemployment.	Based on family size; family of four limited to net income (after child care and other deductions) of $529/month.
Aged, blind disabled, under 100% poverty	Must be age 65+, blind or totally disabled. If they have Medicare Part A hospital insurance, they are also a Qualified Medicare Beneficiary	Income must be at or below 100% of poverty, individual limited to $552/month. If both members of a married couple qualify, couple limited to $740/month.

Medicaid Workshops

In an effort to keep primary care physicians and staff up to date with changes in the Medicaid program, workshops have been scheduled on a monthly basis statewide. The next workshop will be held Wednesday, May 8 at Orangeburg/Calhoun Technical College, Room 118, followed by one in Columbia on Thursday, June 13 at Richland Memorial Hospital Auditorium. The July workshop will be Wednesday, July 10 at Greenville Memorial Hospital Auditorium in Greenville, and the August workshop is scheduled for Tuesday, August 6 at Trident Technical College in Charleston. All workshops run from 9:30 a.m. to 12:30 p.m. For additional information, contact your program manager at 253-6134 in Columbia.

AMERICANS WITH DISABILITY ACT

This act becomes effective on July 26, 1992 for employers with 25 or more employees and on July 26, 1994 for employers with 15 or more employees. The act will prohibit these employers from discriminating against "qualified" individuals with a disability in regard to job applications, hiring, advancement, discharge, compensation and training.

Such employers will have to make "reasonable accommodations" for the disabled.

For more information and suggestions on how to prepare for this law, call Vince Rhodes or Charles LaRosa at the SC Vocational Rehabilitation Department in Columbia at 822-5308.

143RD ANNUAL MEETING UPDATE

If you have not preregistered for the 143rd SCMA Annual Meeting and Scientific Assembly, to be held at the Omni Hotel in Charleston, April 24-28, 1991, please do so as soon as possible. A record turnout is expected.

John J. Ring, MD, AMA President-Elect, will be an honored guest at this meeting. The SOCPAC Luncheon Speaker will be Representative Butler Derrick (D, Third District), and Gerald L. McManis, President of McManis Associates, Inc., will deliver the Leonard F. Douglas Memorial Lecture.

CME workshops are scheduled Wednesday through Saturday afternoons, and the scientific sessions include those scheduled by the SCMA and by various specialty societies. Plenary sessions will address issues ranging from the future of quality health care to questions dealing with death and dying. "The Future of Quality Health Care," scheduled for Thursday afternoon, will feature presentations by Nancy E. Gary, Senior Medical Advisor, HCFA; Mr. Ed Sellers, CEO of Blue Cross and Blue Shield of SC; and Dr. Dan Brake, SCMA Past President; followed by a panel discussion including Mr. Charles Beaman, President and CEO of the Baptist Medical Center in Columbia, and Dr. Jack Boger, AARP member who is also on the National Legislative Council.

"Our Impaired Society," scheduled for Friday morning, will include concurrent workshops on obesity management, overuse and abuse of alcohol and other drugs, and the medical care of self destruction. Friday afternoon's plenary session will deal with the ethical, spiritual and legal aspects of death and dying; and Saturday morning's session on "Infectious Diseases," will cover life-threatening acute bacterial infections, an antibiotic update, the chronic fatigue syndrome, and AIDS/HIV infection. A total of 19.5 AMA Category I credit hours will be available during the Annual Meeting.

LEGISLATIVE UPDATE

This session of the General Assembly has been dominated by ethics legislation and the Appropriations Bill. We expect the reapportionment legislation to begin in late March, which could cause an extended legislative session. Following is an update of key legislation which SCMA is monitoring:

H. 3040, Rep. Lucille Whipper (Charleston)

This bill requires licensed healthcare providers to provide notification of their procedures for filing claims, requires certain organizations providing health care to accept standardized claim forms, provides that a debtor must be notified by mail of the creditor's intentions of submitting a debt to a credit bureau or credit reporting agency, and provides a penalty for violation.

> STATUS: This was a compromise bill the SCMA signed off on. The bill has passed the House and is pending in the Senate Banking and Insurance Committee.

H. 3026, Rep. Larry Gentry (Saluda)

This bill established the offense of boating under the influence of alcohol or drugs and provides a schedule of blood alcohol content that gives rise to presumptions and inferences of operating a watercraft under the influence, etc.

> STATUS: This bill has passed the House and is pending in the Senate Judiciary Committee.

H. 3090, Rep. Harriet Keyserling (Beaufort)

This bill relates to the Death with Dignity Act, so as to authorize a declarant to designate an agent to act on his behalf to ensure that the declaration is given effect, and to revise the definitions of "life-sustaining procedures" and "terminal condition" and add the definitions of "permanent unconsciousness" and "agent," etc.

> STATUS: SCMA not only has closely monitored this bill, but has had a hand in the drafting of the legislation. The House bill has been amended several times in the Judiciary Committee and is still pending.

H. 3179, Rep. Toney Farr (Union)

This bill would require testing when a healthcare worker is exposed to HIV, so as to provide a procedure for testing in the event of exposure to potentially infectious blood or body fluids, and to provide, among other things, for confidentiality and a criminal penalty. Likewise, a patient believing he or she may have been exposed by a member of the healthcare team would be entitled to have the healthcare worker tested.

> STATUS: This bill is currently in the Health Subcommittee of the House 3M Committee. SCMA met with officials of DHEC (who drafted the bill), SCHA lobbyists, research directors of the 3M Committee and others to basically rewrite the bill. It will be discussed at the next SCMA board meeting before being placed on the committee's agenda.

H. 3458, Rep. Irene Rudnick (Aiken)
H. 3531, Rep. John Rama (Charleston)

These two bills deal with timely payment of claims due a licensed health care provider from accident and health insurers.

> STATUS: Both bills are in the House Labor, Commerce and Industry Committee.

H. 3617, Rep. Wes Hayes (York)

This bill will impose an additional license tax on beer equal to forty-two hundredths cents an ounce and on wine equal to sixty-three hundredths cents an ounce, and to dedicate a portion of the revenue from the tax for alcohol and drug abuse programs and enforcement.

STATUS: This bill is in the House Ways and Means Committee. The bill is consistent with the recommendation in the Health Care 2000 Report approved by the SCMA House of Delegates.

S. 30, Sen. Mike Rose (Dorchester)

This bill deals with mandatory suspension of professional licenses for a period of two years, to a person convicted of a drug or controlled substance offense.

STATUS: This bill is in the Senate LCI Committee.

S. 49, Sen. Mike Rose (Dorchester)

This bill requires prescriptions for controlled substances to be prepared in triplicate.

STATUS: This bill was tabled in subcommittee of the Senate Medical Affairs Committee.

S. 314, Sen. Mike Rose (Dorchester)

This bill would prohibit a physician who receives payment under a supplemental program of coverage to Medicare, or other governmental program, from charging to or collecting from a subscriber an amount in excess of the reasonable charge for the service provided as determined by the US Secretary of Health and Human Services.

STATUS: This bill is in the Senate Medical Affairs Committee.

STATE BOARD OF MEDICAL EXAMINERS

In early May, you should receive an application for licensure reregistration for 1991-92. If you do not receive this reregistration form, contact the State Board of Medical Examiners immediately (in Columbia, 734-8901). The fee of $80 and the completed application must be received in the Board office by July 1, 1991 to avoid statutorily mandated late penalty fees.

RETIRED PHYSICIANS

The SCMA has received many requests for physicians to fill in for colleagues who are taking vacation, undergoing surgery or otherwise need to leave their practice for a short while. If you have maintained your SC license and are interested in working on a temporary or part-time basis to fill such a request, please contact Julia Brennan at SCMA Headquarters.

YOUNG PHYSICIANS SECTION MEETING

The next Young Physicians Section meeting will be held during the SCMA Annual Meeting at the Omni in Charleston, Thursday, April 25, 1991. This will be a luncheon meeting from 12:00 noon until 2:00 p.m. The section will be electing officers for 1991-92. If you are interested in attending, call Julia Brennan at SCMA Headquarters.

RESIDENT PHYSICIANS SECTION MEETING

The next meeting of the Resident Physicians Section will be held during the SCMA Annual Meeting at the Omni in Charleston, Thursday, April 25, 1991. This will be a breakfast meeting from 8:00 to 9:00 a.m., during which the section will elect officers for 1991-92. For further details, call Julia Brennan at SCMA Headquarters.

PUBLICATIONS/VIDEOTAPES AVAILABLE

The AMA's accomplishments in 1990 are highlighted in a 14-minute videotape, "Impact '90," to answer the question, "What has the AMA done for you lately?" The tape, which can be shown to medical staffs, describes the dynamic challenges of the new decade and the AMA's extensive and effective activities in the interest of improving the healthcare services of the nation. To obtain the videotape at no charge, call or write Irene Foster, AMA TV and Film Services, (312) 464-5102, 515 North State Street, Chicago, IL 60610.

The AIDS and Law Committee of the Young Lawyers Division of the South Carolina Bar has provided the SCMA with booklets entitled "HIV/AIDS and South Carolina Law." The booklet is intended to be a general introduction to some of the many legal issues arising from the HIV/AIDS epidemic, and is not intended as a legal guide and should not be used as a substitute for the advice of a lawyer. To obtain a copy, contact Kim Fox at SCMA Headquarters.

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Joy Drennen, Editor

President's Page

THANK YOU

This will be my last communication to you from the president's page. How quickly time passes.

Once again you have the opportunity to participate in the Medical Association by attending the annual meeting and I encourage you to do so. The CME portion of the meeting is held in a tradition of excellence and this year promises to be equally good.

Many of the sociopolitical issues to be discussed are reported on elsewhere in this issue of *The Journal.* You can participate in those discussions by attending the reference committee hearings on Thursday afternoon.

You should have already received a membership registration packet. If not, call the SCMA office. It's not too late.

I have shared some of my thoughts on this page over the year and I have discussed several subjects. These are all still in the center of discussion at local, state, national and international levels. Let me remind you of my prediction that the resolution of such issues as accessibility, affordability and accountability will produce a fundamental change in the healthcare delivery system or systems in our society. Further, let me reemphasize the need for physicians to participate in the shaping of any new systems. To do that you must be involved.

Sometime at the annual meeting or perhaps on other occasions I would like to personally thank each of you for choosing me to be your president this year. Until I have that opportunity please accept my effort to express my appreciation in these written lines. To me, my effort in that regard seems inadequate but I thank you for the high honor you gave me and pledge to continue my support on behalf of you and your patients at any opportunity I have. Further, I pledge my support to your upcoming president, Chris Hawk, and wish for him all the pleasure I have had and more. Thank you.

John W. Simmons MD

JOHN W. SIMMONS, M.D.
President

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The Journal
OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

VOLUME 87 APRIL 1991 NUMBER 4

ONE HUNDRED FORTY-THIRD ANNUAL MEETING

THE OMNI HOTEL AT CHARLESTON PLACE
CHARLESTON, SOUTH CAROLINA
APRIL 24-28, 1991

The 143rd Annual Meeting of the South Carolina Medical Association will mark eleven consecutive years in Charleston and the fifth consecutive year at the Omni Hotel.

Information regarding the meeting, including registration form and hotel reservation form, has been mailed to all South Carolina physicians, but if you have not received this information, call SCMA Headquarters in Columbia (798-6207 or 1-800-327-1021). Again, there is no registration fee for SCMA members, and pre-registration is encouraged.

The House of Delegates meets to consider the business of the association on Thursday morning, April 25, and again on Sunday morning, April 28. Reference Committees will meet on Thursday afternoon.

A total of 19.5 AMA Category I credit hours and 19.0 AAFP Prescribed hours have been approved for scientific sessions beginning on Wednesday afternoon and continuing through Saturday afternoon. Of particular interest this year are the four SCMA Plenary Sessions addressing such issues as "The Future of Quality Health Care," "Our Impaired Society," "Ethical, Spiritual and Legal Aspects of Death and Dying," and "Infectious Diseases." Consult the schedule of events which follows for details on all programs.

Special guests for this annual meeting include John J. Ring, M.D., AMA President-Elect, and Representative Butler Derrick (D, Third District) who will be the featured speaker for the SOCPAC luncheon. Gerald L. McManis, President of McManis Associates, Inc., will deliver the Leonard Douglas, M.D. Memorial Lecture.

Again this year, the SCMA will serve as the umbrella organization for a record number of specialty societies who will hold business and scientific sessions during the annual meeting.

The SCMA Board of Trustees will meet on Wednesday, April 24 and at breakfast each day to consider business which arises during the House of Delegates meeting.

This issue of *The Journal* contains reports and resolutions available at publication deadline. Additional reports and resolutions received after this issue has gone to press will be included in the delegates Handbooks which will be mailed prior to the meeting. Delegates are asked to bring their handbooks to the meeting or to pass them along to alternate delegates if they are unable to attend.

—JD

ONE HUNDRED FORTY-THIRD ANNUAL MEETING SCHEDULE OF EVENTS

Wednesday, April 24, 1991

TIME/LOCATION	EVENT
7:30 a.m.-8:30 a.m. Louis's Charleston Grill	SCMA Board of Trustees Breakfast
8:30 a.m.-12:15 p.m. Jenkins/King Room	SCMA Board of Trustees Meeting
11:30 a.m.-7:00 p.m. 2nd Floor Grand Hall	SCMA Registration —Open
12:15 p.m.-1:30 p.m. Louis's Charleston Grill	SCMA Board of Trustees Luncheon
1:00 p.m.-4:00 p.m. Suite 2J	SCMAA/SCIMER Scholarship Interviews
1:00 p.m.-5:00 p.m. Dogwood/Cypress/Live Oak Ballroom and Grand Hall	Exhibitors Setup
1:30 p.m.-5:00 p.m. Jenkins/King Room	SCMA Board of Trustees Meeting
3:00 p.m.-5:00 p.m. Willow I	"Risk Management in the '90s: Helping Each Other in a Risky Business" (SCMA/JUA Risk Management Program for New Physicians) John W. Hunt, M.D., Anderson Frank W. Shealy, M.D., Greenwood
3:00 p.m.-5:00 p.m. Drayton Room	SCMA Workshop: "A Systematic Approach to the Depressed Patient in Private Practice" Moderator: Terry A. Payton, M.D., Columbia Speaker: Burton J. Goldstein, M.D., North Miami Beach, Florida (Sponsored by Dista)
5:00 p.m.-6:30 p.m. Willow I	New Physicians: Risk Management Wine & Cheese

Thursday, April 25, 1991

TIME/LOCATION	EVENT
7:00 a.m.-5:00 p.m. 2nd Floor Grand Hall	SCMA Registration—Open
7:00 a.m.-8:00 a.m. Louis's Charleston Grill	SCMA Board of Trustees Breakfast
7:00 a.m.-8:00 a.m. Fenwick Room	SCMA Past Presidents' Breakfast
7:00-8:00 a.m. Edmunds Room	Specialty Society Delegates Meeting

Thursday, April 25, 1991 (continued)

TIME/LOCATION	EVENT
7:30 a.m.-8:30 a.m. Booths 22 & 65	Coffee
7:30 a.m.-6:00 p.m. Dogwood/Cypress/Live Oak Ballroom and Grand Hall	Exhibits Open
8:00 a.m.-9:00 a.m. Hampton Room	Residents Breakfast Meeting
8:00 a.m.-11:30 a.m. Willow/Magnolia Ballroom	SCMA House of Delegates
9:45 a.m.-10:45 a.m. Booths 22 & 65	Coffee Break (Compliments of The Medical Protective Company)
10:00 a.m.-11:00 a.m. Riley Room	MUSC Medical Alumni Board Meeting
12:00 noon-2:00 p.m. Jenkins Room	SCMA Young Physicians' Section Luncheon & Meeting (Partial Support Provided by the Young Physicians Section of the AMA)
12:30 p.m.-1:30 p.m. Edmunds Room	Reference Committee Chairmen's Luncheon
12:45 p.m.-2:30 p.m. Magnolia Ballroom	MUSC Alumni Luncheon
1:00 p.m.-2:30 p.m. Wickliffe House	Auxiliary Past Presidents' Luncheon
1:00 p.m.-5:00 p.m. 2nd Floor Lobby	Auxiliary Registration—Open
1:30 p.m.-3:00 p.m. Colleton, Fenwick, Gadsden and Beauregard Rooms	SCMA Reference Committee Meetings (Specific room assignments will appear in Delegates Handbook)
1:30 p.m.-4:00 p.m. Willow Ballroom	SCMA Plenary Session: "The Future of Quality Health Care" Moderator: Kenneth G. Varley, M.D., Columbia Participants: Nancy E. Gary, M.D., Senior Medical Director, HCFA, Washington, DC M. Edward Sellers, President, Blue Cross/Blue Shield of SC, Columbia Daniel W. Brake, M.D., Immediate Past President-SCMA, Charleston Charles D. Beaman, Jr., Baptist Medical Center, Columbia Jack Boger, Ph.D., Rock Hill
2:00 p.m.-3:00 p.m. Booths 22 & 65	Coffee Break

Thursday, April 25, 1991 (continued)

TIME/LOCATION	EVENT
3:00 p.m.5:00 p.m. Beauregard, Fenwick, and Gadsden Rooms	SCMA Reference Committee Meetings (Specific room assignments will appear in Delegates Handbook)
4:00 p.m.-6:00 p.m. Dogwood/Cypress/Live Oak Ballroom and Grand Hall	SCMA Reception Honoring Delegates, Alternates, Speakers and Exhibitors (All Registrants Welcome)
5:00 p.m.-6:30 p.m. Colleton Room	Medical College of Georgia Alumni Reception Honoring John W. Simmons, M.D. —1968 Graduate and President of the South Carolina Medical Association
5:00 p.m.-7:00 p.m. Jenkins/King Room	USC School of Medicine Alumni and Faculty Reception

Friday, April 26, 1991

TIME/LOCATION	EVENT
7:00 a.m.-12:00 noon 2nd Floor Lobby	Auxiliary Registration—Open
7:00 a.m.-5:00 p.m. 2nd Floor Grand Hall	SCMA Registration—Open
7:30 a.m.-8:30 a.m. Louis's Charleston Grill	SCMA Board of Trustees Breakfast
7:30 a.m.-9:00 a.m. Fenwick Room	Editorial Board Breakfast
7:30 a.m.-9:00 a.m. Drayton Room	Auxiliary Executive Board Meeting
7:45 a.m.-8:45 a.m. Booths 22 & 65	Coffee
8:00 a.m.-9:00 a.m. Hampton/Gadsden Rooms	Auxiliary Continental Breakfast
8:00 a.m.-9:30 a.m. Beauregard Room	MUSC Class Representatives Breakfast
8:00 a.m.-9:30 a.m. Jenkins/King Room	Risk Management Program (Continental Breakfast) "Philosophy of Practice" Dwain G. Fuller, M.D., Dallas, TX
8:00 a.m.-5:00 p.m. Dogwood/Cypress/Live Oak Ballroom and Grand Hall	Exhibits Open

Friday, April 26, 1991 (continued)

TIME/LOCATION	EVENT
8:30 a.m.-11:00 a.m. Colleton Room	Sports Medicine Committee Breakfast Meeting
8:30 a.m.-12:00 noon Willow Ballroom	SCMA Plenary Session: "Our Impaired Society: How it Affects Physicians in South Carolina"
8:30 9:00	Pre-register for Workshops Introduction and Overview James C. Ballenger, M.D., MUSC
9:30-10:15	Concurrent Workshops: "Current Trends in Obesity Management" Patrick M. O'Neil, Ph.D., MUSC
	"Overuse and Abuse of Alcohol and Other Drugs: Implications for Primary Care" Kathleen Brady, M.D., Ph.D., MUSC
	"The Medical Care of Self Destruction" Gilbert B. Bradham, M.D., MUSC
10:15-10:30	Break
10:30-11:15	Repeat of Workshops
11:15-12:00	Review of Workshop Findings and Panel Discussion
9:30 a.m.-12:00 noon Magnolia Ballroom	Auxiliary House of Delegates
10:00 a.m.-11:30 a.m. Riley Room	Professional Liability Committee Meeting
10:15 a.m.-11:15 a.m. Booths 22 & 65	Coffee Break (Compliments of SmithKline Beecham Pharmaceuticals)
10:30 a.m.-11:30 a.m. Fenwick Room	SCIMER Board Meeting
11:30 a.m.-12:30 p.m. 2nd Floor Lobby	SC Cardiopulmonary Rehabilitation Association Registration
11:30 a.m.-1:00 p.m. Hampton Room	SCMA Medical Ethics Committee Meeting and Luncheon
12:00 noon	Golf Tournament—Organized by and Prizes Awarded by Mead Johnson Nutritional Division
12:00 noon-12:45 p.m. Magnolia Ballroom	Auxiliary Champagne Reception Honoring New Officers
12:30 p.m.-5:15 p.m. Willow Ballroom	SC Cardiopulmonary Rehabilitation Association Symposium
12:30-12:45	Welcome William H. Barnwell, II, M.D., MUSC

Friday, April 26, 1991 (continued)

TIME/LOCATION	EVENT
12:45-1:45	Cardiac Rehab Potpourri: "Quality Assurance vs. Quality Improvement: Is the Process the Same?" Brian Ruhlmann, M.S., Trident Hospital, Charleston "Integrating Cardiac Rehabilitation Into Wellness Programs" Karen Leatherman, M.S., Florence "Assuring Exercise Compliance" Elizabeth Bailey, M.A., USC, Columbia "Education/Research Possibilities Within Cardiac Rehabilitation Programs" Melvin H. Ezell, Ed.D., The Citadel, Charleston
1:45-2:15	"Maximizing Third Party Coverage of Cardiac Rehabilitation Services" Paula Boyer, B.A., Atlanta, GA
2:15-2:45	"Marketing the Cardiac Rehabilitation Program" Deborah Colones, McLeod Regional Medical Center, Florence
2:45-3:15	Break
3:15-4:15	"Current Perspectives and Controversies on Cholesterol and Cardiovascular Disease" Roger Sargent, Ph.D., USC, Columbia
4:15-5:15	"Phase I Programming . . . Patient Education Does Make a Difference" Catherine M. Dumas, R.N., M.A. Ed., Memorial Mission Hospital, Asheville, NC
1:00 p.m.-2:00 p.m. Louis's Charleston Grill	Auxiliary Presidents' Luncheon
1:00 p.m.-3:00 p.m. Beauregard Room	SCMA Workshop: Psychiatric Dilemmas: Dealing with the Complicated Panic Patient "Panic: The Great Masquerader" David Baron, D.O., Deputy Clinical Director, NIMH "When to Consider a Dual Diagnosis" Kathleen T. Brady, M.D., Ph.D., MUSC "Management of these Complicated Patients" R. Bruce Lydiard, M.D., Ph.D., MUSC Panel Discussion
1:00 p.m.-5:00 p.m. Gadsden Room	SC Chapter of the American Academy of Pediatrics Perinatal Section Business Meeting and Scientific Session
1:00-2:30	Business Meeting
2:30-3:00	Break

Friday, April 26, 1991 (continued)

TIME/LOCATION	EVENT
3:00-5:00	"Perinatal Data Collection and its Benefit to Statewide Neonatologists" William Sappenfield, M.D., Columbia Mrs. Elin Holgren, DHEC
1:00 p.m.-5:30 p.m. Jenkins/King Room	SC Dermatological Association Meeting and Scientific Session
1:00-1:50	"Lyme Disease" Donald C. Abele, M.D. Medical College of Georgia, Augusta, GA
1:50-2:00	Questions and Answers
2:00-2:50	"Surgical Anatomy of the Head and Neck" Stuart J. Salache, M.D., Harvard Medical School, Boston, MA
2:50-3:00	Questions and Answers
3:00-3:50	"Will You be Your Brother's Keeper?" Peyton Weary, M.D., University of Virginia, Charlottesville, VA
3:50-4:00	Questions and Answers
4:00-4:50	"Coping with the Chaos of Federal Regulations in the Practice of Medicine" Tommy Walters, Ombudsman Medicare B/PEN Columbia, SC
4:50-5:00	Questions and Answers
5:00-5:30	Business Meeting of the South Carolina Dermatological Association
1:30 p.m.-4:00 p.m. Magnolia Ballroom	SCMA Plenary Session: "Ethical, Spiritual and Legal Aspects of Death and Dying" Moderator: John M. Roberts, M.D., MUSC Participants: Albert H. Keller, Ph.D., MUSC; Stuart Sprague, Ph.D., Anderson; Stephen P. Williams, Esq., SCMA General Counsel; Elizabeth G. Patterson, Esq., USC School of Law, Columbia; Charles G. Sasser, M.D., Conway
2:00 p.m.-4:00 p.m. Hampton Room	SC Society of Otolaryngology Scientific Session "Evaluation and Treatment of Ear, Nose and Throat Problems in Family Practice"
2:00 p.m.-4:30 p.m. Colleton Room	SC Oncology Society Business Meeting and Scientific Session: "Adjuvant Care in Colorectal Cancer" Frederick L. Greene, M.D., USC School of Medicine Robert K. Stuart, M.D., MUSC Luther W. Brady, M.D., Hahnemann University, Philadelphia, PA

Friday, April 26, 1991 (continued)

TIME/LOCATION	EVENT
2:30 p.m.-3:30 p.m. Booths 22 & 65	Coffee Break
3:00 p.m.-5:00 p.m. Drayton Room	SCMA Workshop: "Cults in South Carolina" Moderator: C. Don Bryant, M.D., Anderson George R. Bruce, M.D., Seneca Lewis Marshall, Lexington County Sheriff's Department
5:15 p.m.-7:00 p.m. Suite 2H	SC Cardiopulmonary Rehabilitation Association Reception
6:00 p.m.-7:30 p.m. Second Floor Garden	SCMA Reception (All Registrants Welcome) (Support Provided by Preferred Reinsurance Intermediaries, Inc. and Boyle-Vaughn Associates, Inc.)
6:30 p.m.-9:30 p.m. Sebring-Aimar House (MUSC)	MUSC Reunion—Class of 1946
7:00 p.m.-8:30 p.m. Drayton Room	SC Neurological Association Reception
7:00 p.m.	*MUSC Reunions*
Edmunds Room (Omni Hotel)	Class of 1943
Wickliffe House	Class of 1951
Jenkins/King Room (Omni Hotel)	Class of 1956
Robert's Restaurant	Class of 1961
Willow Room (Omni Hotel)	Class of 1966
Home of Dr. & Mrs. Robert Bowles	Class of 1971

Saturday, April 27, 1991

TIME/LOCATION	EVENT
7:00 a.m.-5:00 p.m. 2nd Floor Grand Hall	SCMA Registration Open
7:30 a.m.-8:30 a.m. Louis's Charleston Grill	SCMA Board of Trustees Breakfast
8:00 a.m.-9:00 a.m. Riley Room	SC Chapter of the American Academy of Pediatrics Executive Committee Meeting
8:00 a.m.-9:00 a.m. Beauregard Room	SC Radiological Society Breakfast Meeting
8:00 a.m.-12:15 p.m. Magnolia Ballroom	SC Cardiopulmonary Rehabilitation Association Symposium
8:00-9:00	"Reversing Heart Disease" Chip Spann, PAC, Greenville

Saturday, April 27, 1991 (continued)

TIME/LOCATION	EVENT
9:00-10:00	"Ongoing Heart Research at MUSC by AHA . . . Insights Into Heart Failure" Frank G. Spinale, Ph.D., MUSC
10:00-10:15	Break
10:15-11:15	"Rehabilitation of the High Risk Patient" James A. L. Glenn, M. D., Charleston
11:15-12:15	"Lifestyle/Behavior Modification Strategies for the Patient with Multiple Risk Factors" Patrick M. O'Neil, Ph.D., MUSC
12:15	Closing Remarks
9:00 a.m.-12:00 noon Drayton Room	SC Society of Anesthesiology:
	"Acute Post-Operative Pain Management" Grant Meisner, M.D., Columbia
	"Advances in Inhalational Anesthetics" Peter Sebel, M.D., The Emory Clinic, Atlanta, GA
	"Monitoring Quality Assurance and Patient Safety" Melinda Bailey, M.D., MUSC
8:00 a.m.-11:30 p.m. Edmunds Room	SC Society of Vascular Surgeons Scientific Paper Presentations
	Panel Discussion: "The Use and Misuse of the Vascular Laboratory"
	"New Horizons in Vascular Surgery: Implications for the Clinical Surgeon" James Seeger, M.D., Gainesville, FL
8:30 a.m.-12:00 noon Willow Ballroom	SCMA Plenary Session: "Infectious Diseases"
	"Life-threatening Acute Bacterial Infections"
	"Antibiotic Update—1991"
	"The Chronic Fatigue Syndrome: What are the Best Management Strategies?"
	Charles S. Bryan, M.D. USC School of Medicine, Columbia (Sponsored by Pfizer-Roerig)
	"AIDS/HIV Infection: Management in Primary Care Practice" Bosko Postic, M.D., USC School of Medicine, Columbia (Sponsored by the AIDS Training Network)
8:30 a.m.-12:00 noon Hampton Room	SC Neurological Association

Saturday, April 27, 1991 (continued)

TIME/LOCATION	EVENT
	"Update on Parkinson's Disease" Raymond Watts, M.D., Emory School of Medicine, Atlanta, GA
8:00 a.m.-4:30 p.m. Dogwood Room	SC Dermatological Association Meeting and Scientific Session:
8:00-8:50	"Cutaneous Manifestations of Borreliosis" Donald C. Abele, M.D., Medical College of Georgia, Augusta, GA
8:50-9:00	Questions and Answers
9:00-9:50	"Complications of Office Surgery" Stuart J. Salasche, M.D., Harvard Medical School, Boston, MA
9:50-10:00	Questions and Answers
10:00-10:50	"Dermatology, Politics and Medicare" Peyton Weary, M.D., University of Virginia, Charlottesville, VA
10:50-11:00	Questions and Answers
11:00-11:50	"The Practice of Medicine in the 1990s" Congressman Butler Derrick
11:50-12:00	Questions and Answers
1:30-4:30	"Maximizing Reimbursement for Your Dermatologic Services" Inga Ellzey, Dermatology Consultant for Practice Profitability Associates
	Questions and Answers
9:00 a.m.-11:45 a.m. Jenkins/King Room	SC Radiological Society Scientific Session:
	"The Changing Financial and Political Climate in Radiology" Lee F. Rogers, M.D., Northwestern University, Chicago, IL
	"Advances in Neuroradiology" Joel Cure, M.D., MUSC
	"Thin-Section CT of the Lung" Meenakshi Bhalla, M.D., MUSC
9:00 a.m.-12:00 noon Cypress Room	SC Chapter of the American Academy of Pediatrics Scientific Session:
	"Problems Unique to Children in Sports"
9:05-9:35	"Cardiovascular Assessment for the Child Athlete" Ashby B. Taylor, III, M.D., MUSC Medical Center
9:35-9:40	Questions and Answers

Saturday, April 27, 1991 (continued)

TIME/LOCATION	EVENT
9:40-10:05	"Sprains and Strains in Youth Sports" Richard H. Gross, M.D., MUSC Medical Center
10:05-10:10	Questions and Answers
10:10-10:30	Coffee Break
10:30-10:55	"Growth Prediction and Recommendations for Weight Training and Contact Sports" Alva L. Strickland, M.D., Spartanburg Regional Medical Center
10:55-11:00	Questions and Answers
11:00-12:00	Panel: "How to Make Every Kid a Winner in Athletics"
	Introduction: "Pressure to Excel Versus Better Education" C. Murry Thompson, Jr., M.D., Mount Pleasant
	"Coaches, Parents and Kids" Richard H. Gross, M.D., MUSC
	"Physicians' Responsibility" Frederick E. Reed, Jr., M.D., Charleston
9:00 a.m.-12:00 noon Fenwick Room	SC Society of Physical Medicine and Rehabilitation "Rheumatic Rehabilitation" Tracy Lynn McFall, M.D., Charleston
	"Diabetic Foot Management" David Shallcross, M.D., Greenville
	"Computerized Gait Analysis" Robert G. Schwartz, M.D., Greenville
9:30 a.m.-11:00 a.m. Gadsden Room	SOCPAC Board Meeting
10:00 a.m.-12:00 noon Beauregard Room	SC Society of Pathologists Business Meeting
11:45 a.m.-12:15 p.m. Louis's Charleston Grill	SC Radiological Society Reception
12:15 p.m.-3:00 p.m. Louis's Charleston Grill	SC Radiological Society Luncheon and Meeting
12:45 p.m.-2:15 p.m. Live Oak Ballroom	SOCPAC Luncheon Guest Speaker: Congressman Butler C. Derrick, Jr.
1:00 p.m.-6:00 p.m. Jenkins/King Room	SC Chapter, American Academy of Family Physicians Board Meeting

Saturday, April 27, 1991 (continued)

TIME/LOCATION	EVENT
2:00 p.m.-4:00 p.m. Colleton Room	SC Society of Pathologists Scientific Session Moderator: John C. Cate, IV, M.D., MUSC "Use of Flow Cytometric Analysis in Diagnosing Immune Thrombocytopenias" John Lazarchick, M.D., MUSC "Introduction to Molecular Pathology and Practical Application" William L. Gerald, M.D., MUSC "Diagnostic Use of Alkaline Phosphatase Isoenzymes" John Griffiths, M.D., MUSC
2:30 p.m.-5:00 p.m. Drayton Room	SC Medical Directors' Association Meeting "Benefits and Risks of Anxiolytic and Hypnotic Therapy in the Elderly" Norman Sussman, M.D., New York University School of Medicine
5:00 p.m.-6:00 p.m. Beauregard Room	SC Medical Directors' Association Reception (Sponsored by SC Health Care Association)
6:30 p.m-7:30 p.m. Dogwood/Cypress Ballroom	SCMA Presidents' Reception (Compliments of Carolina Physicians Advisory Service)
7:30 p.m.-12:00 a.m. Live Oak/Magnolia/ Willow Ballrooms	SCMA President's Inaugural Banquet

Sunday, April 28, 1991

TIME/LOCATION	EVENT
7:00 a.m.-10:30 a.m. 2nd Floor Grand Hall	SCMA Registration Open
7:30 a.m.-8:30 a.m. Louis's Charleston Grill	SCMA Board of Trustees Breakfast
8:30 a.m.-12:30 p.m. Dogwood, Cypress, and Live Oak Ballrooms	SCMA House of Delegates
12:30 p.m.-1:30 p.m. Drayton Room	SCMA Board of Trustees Reorganization Meeting

SCMA NEWSLETTER

APRIL 1991

HIGHLIGHTS OF MARCH 20 BOARD OF TRUSTEES MEETING

At its March 20 meeting, the SCMA Board of Trustees reviewed a report of pending legislation. It was noted that the major healthcare issue at present is the lack of necessary funding for the Medicaid budget. The SCMA and auxiliary are prepared to initiate a letter writing campaign.

The board reviewed Senate Bill 328, which would establish maximum fees for copying records but would require those requesting records to be responsible for paying for these costs. The board recommended that the SCMA seek to raise the proposed minimum fee from $10 to $25.

The board reviewed input from the Medical Ethics and Maternal, Infant and Child Health Committees and decided on the wording of a statement on Pregnancy and Substance Abuse which will be provided to the public agencies working on this problem.

Representatives of the PRO discussed SCMA concerns with the quality review process. The major concern was that the telephone physician, with whom the attending physician can discuss a case, does not make a review decision on the case. The SCMA will work with the PRO on this process. Further participation of physicians as PRO reviewers would assist in assuring the quality of this review. The SCMA Board of Trustees encourages physicians to become PRO reviewers.

The board reviewed a proposed resolution to be submitted to the AMA about Medicare limiting charges. Once finalized, this resolution, which requests the AMA to make this matter a priority, will be submitted for the June AMA meeting.

The board decided to assist BC/BS and the Workers' Compensation Commission with development of guidelines on payments for an office allowance for in-office surgery, if legal counsel determines this advice can be rendered without antitrust implications.

MEDICARE UPDATE

From the Medicare Medical Director's Office

Two and a half years ago, Vasa Cate, MD, was appointed Medicare

Medical Director for South Carolina, a part-time position. The majority of his time is devoted to his practice of medicine in Lexington County. However, in his role of medical director for Medicare, one of his main responsibilities is to draft medical policies which determine how physicians are reimbursed.

After a policy has been drafted, it is sent to the SCMA for distribution to the appropriate specialty society or societies for review and comment. Your feedback is essential to this process. If you are contacted by the SCMA to review a particular policy draft, please respond within the 30-day period so that Dr. Cate might take your recommendations under consideration when finalizing the policy.

If you or your specialty organization has a particular concern about a medical policy or policies, feel free to call Dr. Cate's office at 754-1968, extension 5195, in Columbia. Or, you may address your concerns in writing to Dr. Cate or to the attention of Ellen Reed Fuseler, Medical Affairs Coordinator, 300 Arbor Lake Drive, Suite 400, Columbia, SC 29223.

NEW CLAIM FORM

Medicare, BC/BS of SC and most commercial insurers will begin phasing in the revised HCFA-1500 universal claim form on November 1, 1991. The final layout has not yet been approved, but HCFA has given the go-ahead to accept the new form. Both the old and the new forms will probably be accepted for a few months after the November 1 implementation date to give physicians' offices a chance to get rid of their old stock of 1500 forms.

MEDICAID UPDATE

At the time this newsletter is being printed, the HHSFC had not finalized the bulletin regarding the Medicaid reductions which will occur if additional funds are not allocated to Medicaid from the Legislature and supported by the Governor. There are reimbursement reductions planned for May 1 which we are unable to publish at this time; however, for the most part, reimbursement for primary care services will not be reduced. The SCMA continues to monitor the legislative situation and provide input to the Finance Commission. Serious reductions in the services available to patients will probably occur in June unless funds are available, such as allowing only one hospitalization and one outpatient prescription per person, limiting Community Long Term Care services, eliminating swing bed reimbursement, and other such important services. Please call Barbara Whittaker at the SCMA if you have any questions.

PRO UPDATE

Telephone Conferences

Any physician receiving a 20 or 30 day letter from Carolina Medical Review (CMR) can request a telephone conference to discuss this case with a PRO physician representative. It needs to be emphasized that the request for a telephone conference must be in writing and it must be received in time for the PRO to make arrangements for the call to be completed and allow for any other additional information to be provided within the allotted 20 or 30 day time frame. Since most physician consultants do not conduct their reviews at the CMR office and are not available on a daily basis to accept or make telephone calls, these calls must be scheduled or they are conducted by the medical advisor. Also, since the PRO cannot assume that the telephone conference will be conducted by a PRO representative having the same specialty as the attending physician, the PRO physician representative can only discuss the case and make notes of the additional clinical information provided. This information is then forwarded with the medical record to another PRO physician consultant for review and decision. No decisions are made during the telephone conference.

For additional information, call 731-8225 in Columbia, or 1-800-922-3089 outside Columbia.

WASHINGTON UPDATE

CLIA Provisional Certificate Fees

HCFA recently announced it intends to collect a $261 fee and obtain a provisional certificate by July 1, 1991 from all physicians, laboratories and other healthcare providers who offer lab services. This fee would be required despite the fact that it will be several months before HCFA even publishes regulations to implement the certification of laboratories. The SCMA feels this is not equitable and violates the intent of the Administrative Procedures Act. The SCMA has written the SC Congressional Delegation asking that they contact HHS Secretary, Louis Sullivan, MD, and HCFA Administrator, Gail Wilensky, requesting that HCFA withdraw this plan prior to publication of the regulations.

NEWS FROM THE JUA

Effective May 1, 1991, JUA premiums for professional liability insurance will be reduced by 20 percent, which means a corresponding reduction in the PCF premium rates, also effective May 1.

NEW MIT BOARD MEMBERS ELECTED

Mohammed Yousufuddin, MD, Columbia, and Reginald F. Daves, MD, Conway, have been elected to the board of the SCMA Members' Insurance Trust, replacing Gerald Wilson, MD and John W. Rheney, MD, who had served the maximum number of terms. Daniel W. Brake, MD, Charleston, was reelected for an additional term.

TAX BREAKS FOR OFFICE RENOVATION

Physicians who renovate their offices to increase access for disabled persons are eligible for a new tax credit toward the costs. This provision, enacted last November with the passing of the Omnibus Budget Reconciliation Act, allows a credit for half of the costs of eligible renovations exceeding $250, but no more than $10,250 during any tax year. The new law applies to costs of providing access to facilities and services for people with physical or mental disabilities covered by the recently enacted Americans with Disabilities Act. New construction is not eligible, and covered expenses must be "reasonable to accomplish the purpose." Consult your accountant or tax attorney for details.

FROM THE SCMA ENVIRONMENTAL PROTECTION COMMITTEE

Physicians have entered an optimistic decade and some call it the "decade of the environment." We are here to heal the sick. To better do this, we need to heal this still beautiful but increasingly battered world. To help restore this garden of Eden, the SCMA's Environmental Protection Committee began working last fall. One action taken was to designate a spot in this newsletter for suggestions to our profession as to what we can do, especially in our practices and in our offices, to reduce destructive habits and strengthen the increasing conservation of our world. Share this news with your office personnel and with your family.

1. Stop unwanted junk mail! Write to: Mail Preference Service, Direct Market Association, 6 East 43rd St., NY, NY 10017. They will stop your name from being sold to mail marketers, and thus reduce your junk mail. Recycle the junk mail you do get.

2. Order now from your book store: _50 Simple Things you can do to Save the World_. Order two copies, one for your office and one for your home. Copies are $5.00 each. Published by Earthworks Press, Box 25, 1400 Shattuck Ave., Berkeley, CA 94709.

3. Let the Environmental Protection Committee, chaired by Ed Catalano, MD, know of your concerns and your suggestions to be included in this newsletter.

1991 ANNUAL MEETING UPDATE

As of publication date, over 200 physicians have pre-registered for the 143rd Annual Meeting, to be held at the Omni Hotel in Charleston, April 24-28, 1991.

J. Chris Hawk, III, MD, will be installed on Saturday evening, April 27, as the 128th president of the SCMA. During the banquet ceremonies, the Wyeth-Ayerst Laboratories Physician Award for Community Service will be presented to Charles R. Propst, MD, from Sumter. Congratulations also to the other nominees honored by their county societies: Hunter Woodall, MD, Fairfax; H. B. Mays, MD, Fair Play; William H. Davis, MD, Myrtle Beach; Charles F. Crews, MD, Columbia; and Jeffrey G. Lawson, MD, Greenville.

The scientific assembly offers hour-for-hour CME credit, with AMA Category I credit approved by the USC School of Medicine, and AAFP prescribed credit approved by the SC Academy of Family Physicians. A record number of 13 specialty societies will hold concurrent business and/or scientific sessions. Of special interest is the Thursday afternoon SCMA plenary session entitled "The Future of Quality Health Care," which features special guest Nancy Gary, MD, Senior Medical Advisor to Gail Wilensky, PhD, HCFA Administrator.

Two risk management programs have been scheduled, one geared particularly towards physicians in their first year of practice or entering practice within the coming year. Attendance at this program on Wednesday afternoon will assure them a 50 percent reduction in their JUA premium for the first year, and a 25 percent reduction the second year.

If you have not pre-registered for the meeting, call SCMA Headquarters today (798-6207 in Columbia, 1-800-327-1021 outside Columbia). Registration will also take place on-site.

COLLECTIONS TIPS FROM I.C . SYSTEM, INC.

I. C. System, Inc., a nationwide collection service endorsed by the SCMA, recommends the use of a collection calendar to organize the billing process. There are five steps:

1. Bill the patient at the time the service is delivered, or send the statement immediately thereafter.

2. Send a second billing 15 days later. By billing twice as often, you have a better chance of bringing your bill to the top of the payment stack.

3. If you haven't received payment 45 to 60 days after the bill is due, call the patient and try to determine why. If the patient has a legitimate financial crisis, negotiate a payment

schedule. If the patient becomes hostile, avoid a hard-line response and encourage the patient to explain his or her position so that you can resolve the misunderstanding.

4. If the patient does not meet your negotiated payment schedule, follow up with additional phone calls. This is the time to become firmly businesslike in your collection efforts. Don't rely on promises to pay at an unspecified future time; establish a payment date and suggest that the patient send you a post-dated check for that date.

5. Get help if the patient has not paid you within 90 to 120 days after the account becomes delinquent. The longer you delay in turning over delinquent accounts to a third party for collection, the less likely you will be able to recover your money.

If you would like more information about I. C. System's services, contact Barbara Whittaker at the SCMA or call I. C. System directly at 1-800-325-6884.

UPCOMING MEETINGS/CONFERENCES

Medical staffs are encouraged to elect a medical staff representative to participate in the AMA Hospital Medical Staff Section 17th Assembly Meeting to be held June 20-24, 1991 at the Chicago Marriott Hotel. The HMSS Assembly provides medical staffs with a unique opportunity to discuss and participate in the policymaking process of the AMA. In addition, an educational program on JCAHO and Practice Parameters will be presented and an information exchange will be held on PRO and Managed Care Review. For further information, call (312) 464-4754 or 464-5761.

The AMA Department of Practice Management has scheduled a workshop on "Gearing up for Retirement," at Marriott's Hilton Head Resort, Friday and Saturday, July 26-27, 1991. This workshop, scheduled in two half-day sessions, takes an in-depth look at the entire process of planning for retirement, including personal changes and choices, continuing employment and leisure opportunities, and considerations in closing or selling a practice. For additional information, contact Deborah Stafford at the AMA, (312) 464-4959.

The South Carolina Healthy People 2000 Conference will be held April 22-23, 1991 at the Marriott Hotel in Columbia. This conference will focus on the National Health Promotion and Disease Prevention Objectives for the Year 2000 as unveiled by US Secretary of Health and Human Services, Dr. Louis Sullivan, and recommendations for reaching these health objectives will be developed. For further information, call the DHEC Office of Planning and Policy Development, 734-4930 in Columbia.

COMMITTED TO EXCELLENCE

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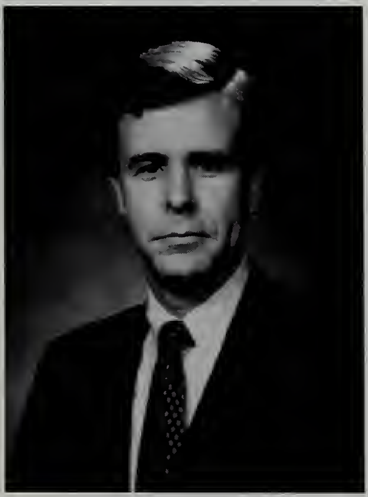

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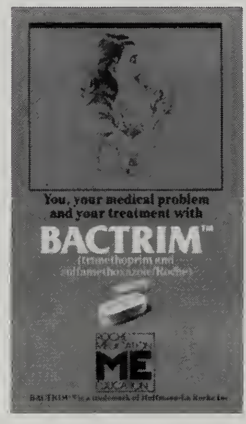
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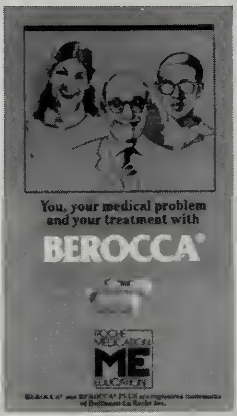

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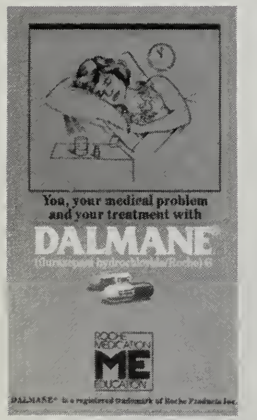
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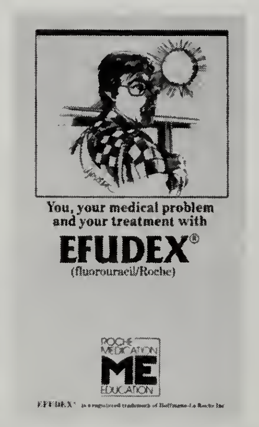
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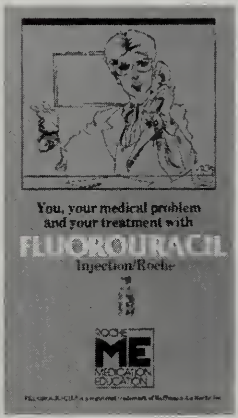

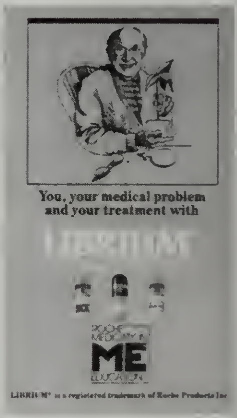
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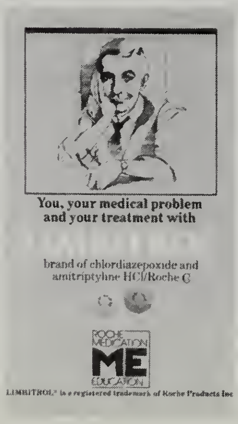
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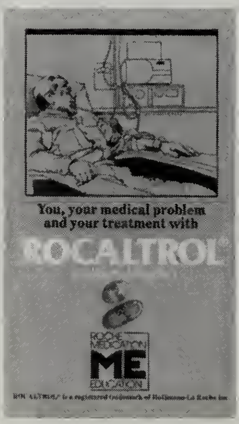
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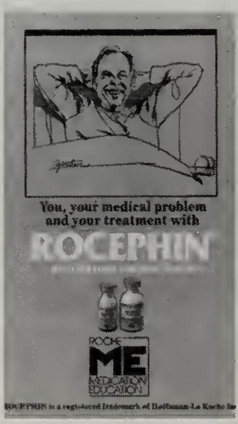
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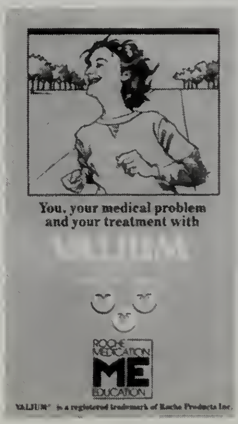
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1991 DELEGATES AND ALTERNATES

ABBEVILLE	Not available at press time
AIKEN	James Hagan, M.D.
	William L. Meehan, M.D.
	James Suhrer, Jr., M.D.
	Stephen VanDerVliet, M.D.
Alternate:	Mark Meyer, M.D.
ALLENDALE	H. E. Woodall, M.D.
Alternate:	Thomas B. Warren, Jr., M.D.
ANDERSON	Arthur J. Dean, M.D.
	Vernon Merchant, M.D.
BAMBERG	Joseph D. Thomas, M.D.
Alternate:	Marion Dwight, M.D.
BARNWELL	William B. Clark, M.D.
Alternate:	Abraham H. Moskow, Jr., M.D.
BEAUFORT	William Besterman, M.D.
	Frank Hart, M.D.
	Oswald Mikell, M.D.
	H. T. Pearce, M.D.
	Francis Rushton, M.D.
BERKELEY	Sam Schumann, M.D.
Alternate:	P. O. Shillinglaw, M.D.
CHARLESTON	J. Gilbert Baldwin, Jr., M.D.
	Walter Bonner, M.D.
	Robert S. Cathcart, III, M.D.
	Bertram Finch, M.D.
	Alan Fogle, M.D.
	Charles Geer, M.D.
	Thomas Leland, M.D.
	Leonard Lichtenstein, M.D.
	I. Grier Linton, Jr., M.D.
	Thomas Lucas, Sr., M.D.
	George Malanos, M.D.
	R. Ramsay Mellette, M.D.
	William Middleton, M.D.
	Roy Nickles, M.D.
	Alan Nussbaum, M.D.
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	J. Austin Ball, M.D.
	Louis E. Costa, III, M.D.
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	Frank E. Harper, M.D.
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	Michael J. Tapert, M.D.
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	Mark Fiedler, M.D.
	Joseph Moore, M.D.
	William Wimberly, M.D.
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	Chip Merriman, M.D.
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LAURENS	Holbrook Raynal, M.D.
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	Robert L. Galphin, M.D.
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	James Garner, IV, M.D.
Alternates:	P. J. Dawani, M.D.
	James Suggs, M.D.
MARLBORO	James McAlpine, M.D.
Alternate:	Church Whitner, M.D.
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OCONEE	Ed Booker, M.D.
	Conrad Shuler, M.D.
Alternates:	J. R. Pruitt, M.D.
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PICKENS	Not available at press time
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OFFICER REPORTS

THE PRESIDENT

It seems only yesterday that I stood before you as your newly installed president. As a reminder, I discussed with you some changes I anticipated in the healthcare delivery system. There were then and there remain today major discussions related to issues of accessibility, affordability, and accountability in health care. I will be discussing these issues with you in this report and in the president's report to the membership.

As other presidents before me, I have visited many of the county societies during this year. This did involve some time and travel but each visit was a rewarding experience. I have shared with each society news about the SCMA and happenings at the association. And I have received comments and suggestions from many. Some of these will be discussed and deliberated this weekend.

Last year we decided in this house to seek an increased participation in the state Medicaid program. I wrote to each of you asking that you take your share of 25 Medicaid patients or two new Medicaid patients per month. Additionally, I asked on behalf of the House of Delegates for each county society to set up a mechanism (perhaps a rotation) to ease the process of Medicaid beneficiaries gaining access to the healthcare delivery system.

I am pleased to report to you that the results have been overwhelming. In each county that I have visited, it has been reported that more doctors are seeing more Medicaid patients, and both Mike Jarrett at DHEC and Andy Laurent at HHS have confirmed that physician participation in the Medicaid program is up. You should applaud yourselves.

I am fully aware that the improved funding and decreased paperwork is a far greater impetus, thus my letter of request on behalf of the Medicaid program. You may be assured that your association will continue on behalf of patients and physicians to insure adequate funding for *appropriate care* for all patients in our state. (The use of the term, "appropriate care," needs and is receiving much discussion. The SCMA is participating as society seeks a definition or description of health care that meets basic needs for everyone and that is not inappropriate in any instance.)

I want to move now to another item I am anxious to report to you. During this past year a group has been put together under the name of South Carolina Health Policy Planning Council. You will recall that in 1989-90, Dan Brake, while SCMA President, had a project entitled Health Care 2000. Somewhat off my immediate subject, but most interesting, is the fact that the report of this project has generated significant interest and discussion at the AMA. Dan did a magnificent job and we should again express our appreciation to him.

You received and approved the report last April. At the same time the hospital association and two Senate select committees did similar studies. Not surprisingly, there were many similar conclusions drawn by the four groups. There are some items on which some groups differed and there were some items addressed in one group and not in others. On the whole, however, there is much similarity.

There is a very common and very basic theme in the reports of all four groups which agrees that there are some major problems facing the healthcare delivery system.

As a follow-up to the work of these groups and perhaps as a natural result of the interest of the people involved, the South Carolina Health Policy Planning Council has come together. It is generally small with a current membership of eight persons representing the medical community, the hospital association, the insurance industry, both the governor's office and the Legislature, the payors, and consumers.

The group is presently chaired by Bob McCoy of SCN. It is being organized as a 501(c)3, so as to have some autonomy. It will be expanded to a maximum of 15 members. Its initial activity will be to discuss and evaluate the various issues and solutions already identified and make recommendations regarding policies that will achieve desired appropriate results.

I am pleased to serve on the SCHPPC and am more pleased that Bill Mahon is one of three people providing staff support to the group. By way of *The Journal* or newsletter, I will keep you posted on its activities and I will report regularly to the Board of Trustees.

Just prior to last year's meeting, a group was formed made up of hospital medical directors or Vice Presidents for Medical Affairs. The group is jointly staffed by SCMA and SCHA. Last year we met in September in a joint session with the Hospital Medical Staff Section during the annual TAP Conference.

I want to urge you to support and communicate with this group. The group now numbers approximately 18 and has representatives from hospitals of all sizes. Hospitals are more frequently establishing such positions and the relationship between hospitals and their medical staffs will be more and more affected by these persons. They will have a great opportunity to facilitate what physicians are trying to accomplish in managing hospitalized patients. Again, I urge you to support and communicate with members of this group regularly.

Concerning the relationship between hospitals and physicians, I have several thoughts. I am troubled that the present relationship is one in which there is somewhat of a competitive spirit in dealings between hospitals and physician groups. Perhaps this is unavoidable in light of shrinking dollars to cover hospital care and physician reimbursement. However, I do not think this is a healthy situation. In this state we have been remarkably buffered or insulated from managed care. Most attempts to provide managed care have failed and the few remaining efforts have very low penetrations. I do not believe this to be permanent. The managed care concept is gaining momentum rapidly across the nation and the southeast will not remain immune to its presence here.

That being the case, I would submit to you that it is not in our best interest to be in a competitive relationship with hospitals. More desirable, I believe, is a healthcare system in which physicians and hospitals are jointly supporting the same mission with similar strategies. I see this as a system in which the hospitals support their physicians as much as physicians support hospitals. It will involve much more participation by physicians in the decision-making and governance of hospitals. This may well be met with some resistance at first. However, as the opportunities arise, we must have physician leadership prepared and ready to accept new and I believe very important roles. At the same time we must be prepared to support hospitals' efforts at cost containment and quality as they deal in more and more direct ways with local payors.

I believe the hospital medical directors group will be most helpful in developing this new relationship.

Beginning just after last year's meeting, our Auxiliary President, Betsy Terry, started on a joint project with the Medical Association and Bar Association to send doctor/lawyer teams into junior high schools to discuss the consequences of substance abuse. The AMA-ABA project is in association with the Department of Education. This project started with the AMA past president and ABA past president on the national level. Each county society president should have received a communication from me about this program. It has gotten underway perhaps better in Greenville than in other communities. I encourage each of you to go back to your local society and get this project started.

You will hear a report from the AMA delegation chairman and I don't want to be duplicative or redundant but I do want to highlight a couple of issues regarding the AMA.

The AMA does serve you and those who are not members. I'll give two pieces of evidence. AMA efforts resulted in at least a year's delay in implementation of the CLIA regulations, and during the delay they will be further evaluated and hopefully modified. Secondly, in a rare partnership with the AARP the AMA was able to persuade the Office of Management and Budget to release funds to the contract of Medicare Intermediaries which if not released would have resulted in additional delays of up to 60+ days in Medicare claims processing. These are only two examples. The AMA does work for you and is worth belonging to.

We have a rare but significant opportunity this year. Randy Smoak, as you know by now, is a candidate for a trustee position at the AMA. Now I have already said it is worth being an AMA member. It will be worth even more if Randy is successful in his election bid. We have good reason to be optimistic but there is a lot of work to be done. There are three candidates for only one seat that is to be vacant. The other candidates are from bigger states and to win at this time will take working right up to the time the vote is taken. it will also take money. Randy may be a little bashful to ask for money but let me tell you it will take in excess of $50,000 to cover the mailings, phone calls, printing, and hospitality at the AMA meeting in June. I have asked in *The Journal* and other communications for you to contribute. I am asking you again. Please consider a $50.00 contribution and ask your colleagues to do the same.

The other person I want to mention in regard to the AMA is John Hawk. Let me make perfectly clear that you have been represented by one who has served as a giant at the AMA. For 25 years he has served the SCMA and the AMA. He has given his attention to every issue and every detail. Under his leadership as delegation chairman, the delegates and officers have worked tirelessly and endlessly to be sure that all issues were addressed and evaluated carefully before a decision to support or not was made. Then with a decision in hand, John's leadership gave our tiny delegation the influence to affect the outcome on the issues of concern.

I want you to join me again for a tribute to John Hawk. Even though he has stepped aside as a delegate, John is not stepping down; he will continue his work in an effort to secure Randy's election. This is not our last tribute to John nor is this adequate but surely we must say, John, we love you for who you are and what you have done.

How does one give his president's report without acknowledging the contributions of the SCMA staff, and expressing appreciation for the assistance they give to the officers? I will not name or list them all. They will be introduced in the course of the meeting. Let me simply say that they are outstanding. Each in their own way, and in their area of responsibility makes an enormous contribution to our effort.

I have to hold up for your special appreciation the leader of this staff. Bill Mahon is without peer amongst medical society executives. The respect he gets from colleagues is inspiring. The smooth operation of our association staff is a marvel. His knowledge about issues and his ability to rapidly provide pertinent information for the officers is amazing. He may well be the most sought out and knowledgeable person at the State House. Every officer, especially your president, attempts to express appreciation. To be adequate is impossible. Please, during the meeting make it a point to personally express yourself to Bill, and the entire staff.

This report, like my term, needs to come to an end. My ability to express my feelings about the honor you have given me is a failing one. Surely others who have held the office can share with me in a personal way what it means to have been chosen by one's peers to hold the highest office. It is clearly the most rewarding experience outside of my family and I will hold dear the experience and the memories of it. To now join the past presidents' club and sit with people the stature of which is represented there is an opportunity I shall also cherish. Not least, to pass this office to your choice and mine, Chris Hawk, is an opportunity for me to join with you in comfort that the leadership of the SCMA is in good hands.

I thank Chris and all the members of the board and all of you. On Saturday evening when I take my leave from the office I will do so determined to work harder than ever on behalf of you and your patients and the SCMA. I am energized by the experience of ten years on your board and the chance to serve as your president. I thank you.

Respectfully submitted,
John W. Simmons, M.D.
President

THE SECRETARY

The past year has once again brought accomplishment to the membership of the SCMA. Our active committees, staff, leadership and general membership have continued to work effectively to preserve a practice atmosphere to be envied by physicians in other states.

The Risk Management Committee and the JUA worked together to provide decreased malpractice premiums for physicians just completing their residency training who complete a risk management course.

One effort to increase SCMA membership in 1990 was the SCMA/AMA Membership Recruitment Program. This contest ran from June to September 1990.

In an effort to increase medical school faculty membership, I wrote to all department chairmen asking for their membership and urging them to ask their department colleagues to join. This has had some positive results and I will continue this effort for 1991.

Membership in the SCMA continues to grow. Our 1990 SCMA membership increased by five percent (5%) over 1989. South Carolina physicians increased their American Medical Association membership by ten percent (10%) over 1989. This resulted in the association receiving an award of $6671. We still have a long way to go in convincing our non-member colleagues to join with us and become active participants in their local, state and national medical associations.

I would like to recognize Dr. March Seabrook, Chairman, Resident Physicians' Section, for his work with that section over the past two years. Dr. Seabrook was able to raise resident physician membership in the SCMA by 50 percent (50%).

It has been my privilege to serve as your secretary this past year, and I would like to thank the Board of Trustees, SCMA membership and SCMA staff for their hard work.

Respectfully submitted,
Bartolo M. Barone, M.D.
Secretary

THE TREASURER

As I complete my first year as Treasurer of the South Carolina Medical Association, I would like to present a short report about the SCMA's financial condition. A more comprehensive report will be presented to the 1991 House of Delegates in Charleston.

For the year ended June 30, 1990, the SCMA had net expenses over revenue including depreciation of $31,490. However, if you exclude depreciation expense of $31,779, the SCMA had net operating revenue over expenses of $289.00. The SCMA had a Fund Balance of $1,302,147 as of June 30, 1990.

The SCMA's current financial condition for the seven months ended January 1991 projects a positive financial position. At the end of January, the SCMA had expenses over revenue of $15,913. We currently project that the SCMA will have a balance of revenue and expenses for this fiscal year.

The investment policies of the SCMA and its affiliates have continued in a similar manner, as in past years, with diversified investments in federal treasury and agency notes and money market funds.

It is the SCMA's policy to maintain total reserves equal to one year's operating budget and any excess should be allocated to cover future operational deficits. Therefore, the permanent and operating reserves will remain constant for the year ending June 30, 1991. As of June 30, 1990, the SCMA had balances of $1,254,332 and $47,815 respectively.

The House of Delegates in 1988 approved a dues increase of $100 to be implemented fractionally over a period of three years. We are presently in the second phase of the increase with the final increase being in 1992. The fact that this is the first dues increase since 1977 is remarkable in itself, and one in which we all should take a great deal of pride. We have a history of operating on a sound financial basis and, with this increase in receipts, we shall continue to do so.

For the fiscal year ending June 1992, we project a surplus of revenue over expenses which is a great improvement over the loss of the previous fiscal year.

I thank the membership for the privilege of serving as your treasurer for the past year.

Respectfully submitted,
S. Nelson Weston, M.D.
Treasurer

THE CHAIRMAN OF THE BOARD

While there are a number of problems associated with the practice of medicine in South Carolina, there are many advantages, compared to other states, which our profession enjoys in this state. Our relationship with the JUA continues to be excellent. The Risk Management Committee activities enjoy strong support. We feel that the efforts of this committee have contributed toward the upcoming JUA premium reduction. Our malpractice premiums continue to be the lowest in the nation. The SCMA Board of Trustees successfully petitioned the JUA for financial support of our Physicians' Advocacy and Assistance Committee. This committee continues to gain statewide support and respect for its efforts.

Our legislative efforts were again quite productive with our ethical and informational approach untainted by the federal investigation. A computer interface with the legislative information data system was implemented. We enjoyed excellent participation at our legislative reception and hopefully we'll be able to continue this function. Our excellent staff in this area has provided us the ability to monitor and provides input for prospective legislation. We have met a number of times over the past year with the leadership of the South Carolina Hospital Association. Several outstanding problems have been resolved and improved lines of communication were initiated. Our President, John Simmons, has provided much help and guidance in this area as well as other areas of endeavor. Meetings were held with leadership from the Physical Therapy Association who, similar to the State Board of Nursing initiatives, were attempting to pass legislation creating an independent practice situation. Although both initiatives have been resolved for the present, we expect our continued vigilance will be required in the future. We also participated in the massive response to the proposed CLIA regulations whose implementation was successfully delayed pending further review.

We have met with DHEC representatives on numerous occasions and our cooperative relationship continues with relatively good communication on a wide range of issues. Commissioner Mike Jarrett has continued to serve as an excellent advocate for the provision of quality health services to the disadvantaged. We have traveled with DHEC to outlying communities to help resolve various controversies with the agency. We have provided input on regulations ranging from waste disposal and HIV testing to infectious disease reporting and controlled substance monitoring. On occasion, we have also utilized DHEC personnel as a resource for our Environmental Committee.

Negotiations were successfully completed with our Executive Vice President, Bill Mahon, and his contract was renewed for a five-year period. Bill and the remainder of our SCMA staff continue to perform in an exemplary fashion. Those of you who have had the opportunity to interface with any number of our staff will bear witness to the excellence of our support. This opinion was also documented by the membership survey conducted as part of the updated long range planning process performed by McManis and Associates. In an effort to provide broad access to leadership roles within the organization, the board has proposed changes which would limit the tenure of AMA delegates to ten years and adjust the tenure of Board of Trustee membership to eight years.

We have rallied behind the candidacy of our Past President, Randy Smoak, for a position on the AMA Board of Trustees. This candidacy requires both financial and political support. Any contacts with AMA delegates will certainly help and be greatly appreciated. Randy has completed his term as Chairman of AMPAC and is widely known and respected within the AMA. We believe that he has an excellent opportunity for election and this would provide a direct conduit to the AMA policy-making process.

In summary, I would submit that your board has represented the practicing physicians of this state with integrity, compassion and competency. I would remind you that at this meeting, they, like you, attend without per diem and cover all their own expenses. I have been ably assisted and guided by the outstanding members of the board with special help from Chris Hawk, the previous Chairman of the Board. If I were not in group practice, with coverage by an understanding and generous group of partners, I would not have been able to meet the responsibilities of the office. I am also obligated to acknowledge the cooperation and support of my wife, Susie. I appreciate the opportunity to serve and I have striven, to the best of my ability, to justify the confidence you have placed in me.

Respectfully submitted,
Edward W. Catalano, M.D.
Chairman of the Board

THE SPEAKER OF THE HOUSE

The 143rd Annual Meeting and Scientific Assembly of the SCMA will be held April 24-28, 1991, in the Omni Hotel at Charleston Place. This is the fifth year our meeting will be held in this exciting location. The clinical sessions and social events should generate much enthusiasm. Dr. Gerard Jebaily and his CME Committee have arranged an outstanding array of speakers to update us in various aspects of medicine. We will have a plenary session on our impaired society with emphasis on obesity, substance abuse and other maladies. In addition, an entire halfday will be devoted to infectious diseases. Dr. Nancy Gary, Assistant Medical Director of HCFA, will be a featured speaker during our scientific assembly. At least ten of our state specialty societies will hold their meetings during our annual gathering. A total of 19.5 CME credit hours can be obtained beginning Wednesday afternoon.

Special guests for the week will include Dr. John J. Ring, President-Elect of the American Medical Association, Gerald McManis, our Leonard Douglas Memorial lecturer, and Congressman Butler Derrick who will give our annual SOCPAC Luncheon address. On Saturday evening, we will honor Dr. Chris Hawk, our President-Elect, at the Inaugural Banquet.

Your Board of Trustees, officers and staff have worked this year to implement those resolutions and recommendations adopted by the House of Delegates at its 1990 meeting and included with this report. One of the major actions of the 1990 House of Delegates was to adopt sections of the Health Care 2000 initiatives. You advocated for immunity from liability for no-code orders written in accordance with a living will or other legally recognized instructions and this was referred to the Board of Trustees for action. It became law in 1990. You also encouraged improved access to health care by asking South Carolina physicians to accept Medicaid patients into their practices.

As you peruse the resolutions from last year and listen to various staff and officer reports including that of our executive vice president, you will undoubtedly see that the directions you set for our association have resulted in numerous successes this year. Our organization has had a very positive influence on our state Legislature in matters regarding the well-being of our patients and practices. The effects of our tort reform activities are still being felt in reduced professional liability insurance premiums. Your president, president-elect and board chairman, along with key staff, have accessibility and credibility with our Congressional Delegation in Washington. Their input to key congressmen and senators should help in our plight with Medicare.

Your full-time staff of SCMA continues to work to insure that the House of Delegates functions as a completely representative body for our membership. We continue to have increased interest in our body from the specialty society delegates and this is particularly pleasing. We want to continue to enhance the spontaneity and effectiveness of our body and to improve the opportunity for individual delegate input. In these and other matters we again owe a debt of gratitude to our hardworking Executive Vice President, Bill Mahon, and his staff that serves us so well. These men and women are guarding our interests and those of our patients. When you see them at this meeting, don't forget to thank them for all they do for us.

Respectfully submitted,
O. Marion Burton, M.D.
Speaker of the House

TRUSTEE REPORTS

TRUSTEE, FIRST MEDICAL DISTRICT (METROPOLITAN)

It has been my pleasure to be the Trustee for the First District for the past year. During this time, I have begun to learn how the Board of Trustees functions and have been surprised at the diversity of SCMA activities. I have been particularly impressed with the competence and professionalism of the staff members and their eagerness to help in any way. Members of the board also give their time willingly and are excellent representatives of medicine in South Carolina. Representing medicine and sick patients simultaneously is no mean feat.

In the past year, the lowcountry has largely recovered from the devastation of Hugo and is moving forward. A Prenatal Care Access Center has been established by the Charleston County Health Department with the cooperation of the Indigent Care Committee of the Charleston County Medical Society. This center is now handling "paperwork" for pregnant Medicaid patients and referring them to private obstetricians for care. Many private physicians are participating in this endeavor, affording these patients care they could not have obtained otherwise.

I look forward to the next year on the SCMA board.

Respectfully submitted,
Richard E. Ulmer, M.D., Trustee,
First Medical District (Metropolitan)

TRUSTEE, FIRST MEDICAL DISTRICT

It has been an honor to serve as your representative as a Trustee for the First District. This is my third year as a trustee and I still find it a most rewarding and exciting position. It is very rewarding to be involved in the future and policymaking decisions of organized medicine for the state of South Carolina.

I feel that the Board of Trustees has been most receptive and responsive to the needs of our membership and has gotten involved in specific areas when this needs to be done. Your board has been progressive and assertive as it pertains to the issues we have undertaken.

At the present time, the effort to establish a component medical society in the Beaufort-Hilton Head area is making very little progress. This is mainly due to the geographical distance between the two areas. I am still hopeful that something will work out in the near future.

I continue to visit the component medical societies and find this to be most rewarding and satisfying. I look forward to working for the members of the First Medical District for the South Carolina Medical Association as I begin my second term.

Respectfully submitted,
John B. Johnston, M.D., Trustee,
First Medical District

TRUSTEE, SECOND MEDICAL DISTRICT (METROPOLITAN)

I am grateful to the members of the Second Medical District of South Carolina for allowing me to complete my fifth year of representation. This past year I was also privileged to serve as Chairman of the Board of Trustees.

During this past year we have observed continued progress in the commitment to improve communication, cooperation and coordination between the SCMA and the various specialty and local medical societies. Although the travel and meeting commitments essentially eliminate any free time, it is gratifying to observe the positive impact that the SCMA is able to produce with regard to numerous critical issues affecting our practice and the health of our patients throughout the state.

To avoid redundancy and excess verbiage, I'll reserve the remainder of my remarks for the Chairman of the Board's report.

Respectfully submitted,
Edward W. Catalano, M.D., Trustee,
Second Medical District (Metropolitan)

TRUSTEE, SECOND MEDICAL DISTRICT

My first year on the SCMA Board of Trustees has been interesting and certainly educational. The problems and challenges facing medicine today, particularly in the private sector, are multiple and disturbing. They range from ethical, legal and financial issues to ever-increasing interference and regulation from state and federal agencies. At times these developments seem unanswerable and defeating. No one individual acting alone, no matter how talented and energetic he or she may be, can expect to make a significant impact. I feel strongly that only through organized medicine and the organized decision-making process can we expect to substantially influence the diverse and difficult decisions confronting our profession today. With this in mind, I urge all of you to become active members of your local, state and national societies.

I have been most impressed by the leadership of our state society. They are as dedicated, hardworking and non-self-serving as any group of men and women with whom I have ever had the privilege of working. We all benefit from their efforts and owe them our full support and sincere gratitude. Our Executive Vice President, Mr. Bill Mahon, and his very capable staff do a truly excellent job of running the SCMA on a day-to-day basis. There are many ways they can help our local societies as well as individual physicians either directly or by directing your questions to the proper resource. I encourage you to avail yourself of their expertise.

I attended the SCMA Leadership Conference in February. It was an excellent program, both informative and thought-provoking. Attendance was good, but it could have been better. It would be well worth your taking time to attend future sessions.

As most of you know, Dr. Randy Smoak is a candidate for the AMA Board of Trustees. It has been over 30 years since a South Carolina physician has served in this capacity. I feel we could not have a finer representative to articulate our position on the issues confronting medicine. Unfortunately, the campaign to achieve this goal is very costly. Please show your support for Dr. Smoak's candidacy with a generous contribution.

In closing, I would like to thank you for allowing me to serve as your board representative. I have enjoyed my first year of service and look forward to continuing to learn and to better serve in this capacity.

Respectfully submitted,
Bryan L. Walker, M.D. Trustee,
Second Medical District

TRUSTEE, THIRD MEDICAL DISTRICT

I have appreciated the opportunity to serve as Trustee of the Third Medical District for the past six years. It has been a time of much change and a rather busy time. In South Carolina, we have won a lot of our battles, but on the national scene we are losing a lot of others. The malpractice situation has improved considerably, and our insurance rates have been stabilizing and have actually been reduced. The Risk Management Committee deserves a lot of credit as well as the JUA. The SCMA has worked closely with the Risk Management Committee and the JUA to solve these problems.

On the national scene, the government is tightening up the financial screws and also making it much more difficult to take care of federally funded patients. This year we are shifting away from the MAAC and have more-or-less been given the 1.25 percent rule for this year. Next year, we are supposed to be phasing in the RBRVS. I think that, regardless of whether we consider ourselves "thinkers" or "doers," the government will do neither group any favors. We must not let outside forces divide us on fee issues or any other issues.

Again, I appreciate the opportunity of having served the Third District and I am bowing out since my six-year term is up.

Respectfully submitted,
Richard M. Carter, M.D., Trustee,
Third Medical District

TRUSTEE, FOURTH MEDICAL DISTRICT (METROPOLITAN)

The SCMA continues to serve its vital function of representing its members' position as a unified voice to the state and federal governments, providing continuing education through SCIMER, making medical and disability group insurance available to the members at competitive rates and, perhaps most importantly, serving as a forum that allows discussion and formulates proposals to affect the current and future health care for South Carolina.

I am privileged to be serving my third term as District Four Trustee and also to have served this year as vice chairman of the Board of Trustees and Executive Committee member. I believe the board continues to work effectively in making and establishing policies which are implemented by the SCMA staff in Columbia. The most important issue this year was the board's continued backing of the initiatives contained in Health Care 2000. The SCMA committees continue to function effectively, and the Legislative Activities Committee had the honor of having Senator Warren Giese discuss with them a bill that he had proposed.

On a local level, the Greenville County Medical Society has been quite active during its centennial year. Of great significance is the fact that the county society moved into a spacious new office building that allows expansion for the future. The society continues to sponsor Saturday programs at the Roper Mountain Health and Science Center and has also provided a committee to finalize plans for a clinic to provide access of care for indigent and Medicaid patients. A monetary contribution was given to Earth Day activities for Greenville County and the society also participated in the National Red Ribbon Campaign through a number of activities which included the appearance of GLAD, a group of local teenagers who represent a strong peer to peer message about the dangers of substance abuse. The county society, in conjunction with the Greenville County Medical Auxiliary, initiated the AMA-ABA Substance Abuse Education Project by sending teams of physician-attorneys to the local schools. The centennial year of the Greenville County Medical Society was capped by the annual formal ball, as well as the appearance at one of our meetings by AMA President-Elect, Dr. John Ring.

Respectfully submitted,
James B. Page, M.D.,Trustee,
Fourth Medical District (Metropolitan)

TRUSTEE, FOURTH MEDICAL DISTRICT

As your newly elected trustee from the rural portion of the Fourth District, it has been my pleasure to serve for my first year. During the course of this year, I have attended all the SCMA Board of Trustees meetings. I have attended the SCMA Board Retreat in conjunction with the TAP conference at Hilton Head where we participated in quite a bit of discussion about the McManis evaluation of the SCMA.

I recently attended the SCMA Leadership Conference in Columbia which I thought was fairly well-attended. I thought this was a timely conference which addressed many of the problems of the practicing physicians of this state.

I have, in my district, tried to make myself available to the physicians in that area, have contacted several physicians about membership, and have tried to be an advocate and a spokesman for the South Carolina Medical Association as well as the American Medical Association.

In my role as Chairman of the SCHMSS organization, I have been somewhat disappointed by poor participation from the state hospitals in electing a representative from each hospital to the HMSS, of the SCMA, as well as the AMA. I personally have attended the annual and interim meeting of the HMSS, of the AMA, and have been disappointed by the fact that I was the only representative from the state of South Carolina at either one of these meetings. I vow to work harder and longer at increasing the membership and participation in this valuable arm of the state and national medical organization.

Again, it has been my pleasure serving my first full year as a member of the Board of Trustees of the SCMA. I hope as I start another year that I will have learned more, understood more, and will, therefore, be prepared to serve better.

Respectfully submitted,
Jerry R. Powell, M.D., Trustee,
Fourth Medical District

TRUSTEE, FIFTH MEDICAL DISTRICT

It has indeed been a pleasure and privilege to serve as Trustee from the Fifth Medical District of the South Carolina Medical Association. Actually, the past year has not involved any acute or pressing issues with the Legislature or with the Congress. I think we have been fortunate on a national level to have gotten HCFA to reevaluate their stance on certification and licensing of physicians' offices laboratories. This is directly related to a large write-in response from physicians all across the state and nation. The South Carolina PRO continues to be a source of aggravation to many physicians in South Carolina; but let me reassure you that as a member of the Board of the South Carolina PRO that in SC our Peer Review Organization is exemplary in that we have a lower denial rate than the national average. Our Primary Care, Medicaid & Indigent Care Committee has been active in informing the Health and Human Services Finance Commission of physician problems in dealing with their agency. The result has been increased physician participation in the Medicaid system.

At the present time, our South Carolina Medical Association is a strong pro-active professional and political organization that is doing a great job representing patient and physician concerns. I appreciate the physicians of Kershaw, Lancaster, Chester, Fairfield and York counties for allowing me the honor of representing them on the Board of Trustees and look forward to the coming year.

Respectfully submitted,
Roger A. Gaddy, M.D., Trustee,
Fifth Medical District

TRUSTEE, SIXTH MEDICAL DISTRICT (METROPOLITAN)

This has been a very interesting year for medicine. It has been full of "operations." Initially, there was Operation Lost Trust which rearranged the legislature somewhat and has kept our leadership and lobbyists busy learning new faces in important positions.

There was Operation Desert Shield and then Desert Storm which removed some of our colleagues from the state and to active duty, and I think that we owe all of them a word of appreciation for what they have done. The federal government continues to operate on medicine. Medicare is trying to excise the profitability and right of us to see the patients that we choose and medicine continues to change rapidly and sometimes seemingly beyond our control.

The only hope that we have at this point lies with organized medicine, and I feel that every physician should be involved in the political process of medicine in order to preserve the art and practice of medicine as well as possible. Most of you who will read this report will be members of organized medicine and this is like preaching to the choir. However, I would encourage you to recruit your colleagues who may not be members of the South Carolina Medical Association to join and to participate.

I have enjoyed serving this year as the sixth District Trustee and if I can be of any assistance to any members of the association, please do not hesitate to call.

Respectfully submitted,
J. M. Lindsey, M.D., Trustee,
Sixth Medical District

TRUSTEE, SIXTH MEDICAL DISTRICT

By the time of the Annual Meeting I will be completing my third year on the Board of Trustees. I continue to enjoy the work and remain impressed by the level of dedication of our members and staff. I have been able to visit a majority of our representative county society presidents during this year.

Given the recent climate in Columbia, I think it is important that we continue to maintain and strengthen our lobbying effort, particularly since we are one of those lobbying groups that have taken the high road to insure member education. We also need to continue to work closely with the state bureaucracy particularly with funding problems in the Medicaid program.

We need to continue to work on our Health Care 2000 plan and similar endeavors. These issues will be of utmost importance as governments at local, state and federal levels all grapple with medical costs. We need to be involved in policymaking at each level with a positive point of view.

I was fortunate to be able to attend the Interim Meeting of the AMA. I was a backbencher, but was impressed by the way our delegates are dedicated to their job. They put in long hours and have impact although from a small state. We need to do all we can to work for Dr. Randy Smoak's election to the AMA Board. Dr. Hawk had a very nice turnout for his farewell reception and he will be greatly missed by all of us. However, I am impressed that the other members of the delegation are well-known and plunge in to meet as many delegates as they can so that we will continue to be well represented at the AMA level. Our AMA delegation deserves a vote of thanks.

Respectfully submitted,
Stephen A. Imbeau, M.D., Trustee,
Sixth Medical District

TRUSTEE, SEVENTH MEDICAL DISTRICT

The year has moved along rather swiftly. I have been trying to keep up with all areas of the district and have tried to keep them informed. The formation of the Environmental Committee to monitor hazardous wastes and other environmental issues and problems was certainly a step that physicians in District Seven were glad to see get underway and functioning. This is an active committee and will be reporting periodically. The physicians of this district have been concerned about the Carolina Medical Review and what seems to be a lack of communication with them. The directors of the PRO have been invited to attend the Board of Trustees' meeting in March and perhaps something constructive will come out of this meeting, and by the Annual Meeting I hope to be able to report that some of the problems will have been aired and solved.

I have enjoyed working for and with the physicians of District Seven and urge them to call me if they have any questions.

Respectfully submitted,
J. Capers Hiott, M.D., Trustee,
Seventh District

TRUSTEE, EIGHTH MEDICAL DISTRICT

Time moves quickly, sometimes bringing relative quiet and sometimes bringing great change. This year is no exception. Medicare moves to a relative value system for each specialty. Waste management regulations become more defined. It goes on and on.

Medicine becomes more and more sophisticated. Patients become more and more sophisticated. Everyone watches medical costs and wants more for less. Medicine now demands much more than just attending to the needs of the patients. The SCMA, the AMA and our specialty organizations are here to help us meet these challenges. Hopefully, you are supporting and utilizing these organizations.

We are fortunate to have a well-qualified SCMA staff and should be thankful for their dedication. The physicians in the Eighth Medical District are among the finest anywhere and I thank you for the privilege of representing you.

Respectfully submitted,
Dallas W. Lovelace, III, M.D., Trustee,
Eighth Medical District

COMMITTEE REPORTS

ADVISORY COMMITTEE TO THE SOUTH CAROLINA DEPARTMENT OF VOCATIONAL REHABILITATION

The South Carolina Medical Association Advisory Committee to the SC Department of Vocational Rehabilitation met on Thursday, February 21, 1991 at the Embassy Suites Hotel, Columbia, South Carolina. Dr. Ben N. Miller, Chairman, presided. Members of the committee present were: Dr. Woodrow Long, Jr., Greenville; Dr. James E. Padgett, Jr., Columbia, representing DHEC; Dr. Patricia Sadler, Clinton; and Ms. Barbara Whittaker, Columbia, representing the South Carolina Medical Association.

Vocational Rehabilitation was represented by Mr. Preston Coleman, Assistant Commissioner/Administrative Services; Mr. Jim House, Client Services Consultant; Mr. Pete Howell, Assistant Commissioner; Dr. Paul G. Knight, Assistant Commissioner/Client Services; Mr. Charles LaRosa, Assistant Commissioner; Mr. David Lever, Assistant Commissioner; Mr. Vince Rhodes, Assistant to the Commissioner; Mr. Rick Vandiver, Director, Disability Determination Division; Mr. Wayne Nance, Quality Assurance Analyst, Disability Determination Division; and Dr. Jim Weston, Physician, Disability Determination Division.

Dr. Miller welcomed the members of the Advisory Committee.

Mr. Charles LaRosa, Assistant Commissioner, spoke on behalf of Mr. Joe Dusenbury, Commissioner, and stated that this is a very critical time for vocational rehabilitation.

Mr. Paul Knight, Assistant Commissioner/Client Services, was presented and gave an update on the Cardiac Rehabilitation Programs in South Carolina. He stated that the Criteria for Certification of Cardiac Rehabilitation Programs in South Carolina were adopted on April 15, 1987. The South Carolina Medical Association designated the Joint Committee on Cardiac Rehabilitation to coordinate the certification of outpatient cardiac rehabilitation programs. In the beginning, Spartanburg General Hospital, University of South Carolina, McLeod Regional Hospital, Greenville Hospital Systems, Providence Hospital and the Medical University of South Carolina participated in the program. Since then, 15 more hospitals have cardiac rehabilitation programs and it is anticipated that three more hospitals will join the program in 1991.

Mr. Vince Rhodes, Assistant to the Commissioner, and Mr. Charles LaRosa, Assistant Commissioner, were presented. They gave a report on the Americans with Disabilities Act (ADA) and stated that all facets of society will be affected by the implementation of this act. It was pointed out that 43 million people have one or more physical or mental disabilities.

Mr. Rick Vandiver, Director, Disability Determination Division, was presented and he expressed his appreciation to the medical community for their tremendous assistance and asked for their continued support in the coming year. He stated that the division was now processing the Medicaid Disability Determination claims and the number of these claims have expanded. There are some three to five thousand claims a year to be processed. There has been some problem with funding, but this is expected to be worked out. At present, the department has been funded to process approximately 36,853 disability claims.

A new ruling concerning children on disability became effective February 11, 1991 and this will result in the reprocessing of some six or seven thousand children's claims.

Mr. Wayne Nance, Quality Assurance Analyst, Disability Determination, was presented and he stated that there had been some movement by the medical community seeking changes in the way children's disability claims were handled. This change has now been implemented and the department is in the process of reprocessing previous claims as well as the new claims.

At this time the floor was opened for questions and discussion. Each member was given an opportunity to ask questions and make comments. The members expressed their appreciation for the informative meeting and indicated they were impressed with the work of Vocational Rehabilitation.

Mr. David Lever, Assistant Commissioner, gave a brief report on ERGOS and indicated that this would be on the agenda for next year.

At this point, the meeting adjourned for dinner and continued comments and questions. There being no further business or discussion, the meeting was adjourned.

Respectfully submitted,
Ben N. Miller, M.D., Chairman

THE COMMITTEE ON AGING AND MEDICARE

At the request of the SC Commission on Aging, our committee met to receive information on driving and the elderly. Representatives of the SC Department of Highways and Transportation also attended and provided background information regarding accident rates and the elderly.

Following this, our committee met with representatives of Medicare to discuss how we could best serve our members. We received information on Medicare medical review and comparative data profiles.

At the SCMA Leadership meeting on February 20, a presentation on Medicare was made by Vasa Cate, M.D., practicing internist and Medical Director for SC Medicare; Laura Morris, who is Senator Hollings' health care advisor; Barbara Whittaker of the SCMA staff; and myself.

The major concern of SC physicians with Medicare is the OBRA requirement limiting charges and the fact that in 1992 these limiting charges will be reduced to 120% of the nonparticipating prevailing rate.

Respectfully submitted,
Margaret H. Fitch, M.D., Chairman

THE CONSTITUTION AND BYLAWS COMMITTEE

The Constitution and Bylaws Committee recommends to the House of Delegates that the following amendments to the Bylaws be considered for adoption.

Numerous physicians are retiring to South Carolina and after joining the SCMA for a minimal number of years, as few as one, they are applying for honorary membership and applying the numerous years they practiced in another state to meet the time requirement. Your Bylaws Committee feels that this is unfair to in-state members who are required to pay regular dues for at least twenty-five (25) years before qualifying for honorary membership. It is for this reason we recommend the following change:

1.42 HONORARY MEMBER. Regular members shall automatically become honorary members after having been a member in good standing for forty (40) years. Regular members who have been in good standing for twenty-five (25) years shall, upon retirement from active practice, be eligible for honorary membership provided the component local medical society so recommends and the application is approved by the Board of Trustees. In defining number of years that a physician has been a member in good standing, recognition shall be given to years that a member might have accumulated as a member of the component medical society of another state *provided that such member has been a regular member of the SCMA for a minimum of ten (10) years.* EXCEPTION: Physicians who go directly into the military or missionary service following graduation from medical school or internship without having joined a component local medical society, but who become members of a component local medical society and the Association following their discharge, shall be entitled upon the approval of such component society, to have their period of service up to five (5) years included in the calculation of their period of membership to qualify for the status of honorary member.

The South Carolina Medical Care Foundation has been dissolved as a corporation and the following change deletes reference to the Foundation.

1.71 ENUMERATION AND DUTIES. The subsidiaries will include, but not be limited to the following entities with functions as follows:

~~A. The South Carolina Medical Care Foundation will provide:~~
~~—Physician private review~~
~~—Review contracts with business and industry, government or other clients.~~

A. The South Carolina Institute for Medical Education and Research will:
—Seek grants from government and foundations for programs and activities consistent with the mission and goals of the SCMA.
—Seek contributions from physicians, other individuals, and organizations to support programs and activities consistent with the mission and goals of SCMA.
—Fund allowable programs and services to be executed by SCMA to meet member needs or help achieve SCMA goals and objectives (e.g., public health program).
—Fund basic or applied research consistent with SCMA's mission, goals and objectives.

B. SOCPAC will be:
—A key element in SCMA's lobbying efforts.
—Bipartisan in its policies and support SCMA's overall goals and objectives in its efforts.

C. The Members' Insurance Trust will:
—Provide all insurance programs deemed appropriate in terms of member needs and economic considerations.
—Expand in programs, as appropriate, and in subscribers in order to remain viable.
—Be competitive to ensure viability and support SCMA financial objectives.
—Serve as a vehicle to support SCMA's membership services objectives.

The Board of Trustees is recommending that the terms of the AMA delegates and alternates be limited in order to provide the opportunity for more members of the SCMA to participate in AMA activities. Section 2.231 is recommended as an addition to the Bylaws to establish the terms as recommended by the board. Provision is made for the board to allow an extended term if it is to the benefit of the SCMA.

2.23 AMA DELEGATES AND ALTERNATES. The House of Delegates shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and Bylaws of that body. In order to stagger the terms of the delegates to the American Medical Association, at least one (1) delegate and one (1) alternate delegate shall be elected each year to serve for two (2) years.

2.231 TERMS OF AMA DELEGATES AND ALTERNATES. AMA delegates and alternates shall be elected to serve no more than four two-year terms. A member who serves as both a delegate and an alternate shall be limited to a maximum of five two-year terms. The Board of Trustees shall be empowered to extend the number of terms based upon the request of the incumbent whose term is expiring and with evidence that such extension will be to the benefit of the SCMA.

The Board of Trustees recommends that the terms of trustees be extended from three to four. The reason for this recommendation is that the turnover on the board over the last five years has been extensive and there are now a number of board members who wish to seek leadership positions beyond that of trustee but find their terms expiring before they have the opportunity.

4.221 TERM OF BOARD MEMBERS. Board members shall be elected for a term of two (2) years, but no board member shall serve for more than ~~three (3)~~ *four (4)* consecutive terms, and the elections should be staggered so that members of the board will be elected yearly, with trustees from odd-numbered districts being elected in odd-numbered years, and trustees from even-numbered districts being elected in even-numbered years. If a board member is elected to fill a term of less than two (2) years due to a vacancy, the partial term of office shall not be considered as a full term toward the total of ~~three (3)~~ *four (4)* terms allowed.

The amendments to Section 5.11 are recommended by your Bylaws Committee to require registration by all persons participating in the annual session.

5.11 REGISTRATION. Each ~~member~~ *person* in attendance at the annual session shall register. Upon verification of membership, a member's badge shall be evidence of the right to all privileges of membership at that session. ~~No physician shall take part in any of the proceedings of an annual session until complying with the provisions regarding membership in the Association.~~

Respectfully submitted,
William H. Hester, M.D., Chairman

THE CONTINUING MEDICAL EDUCATION COMMITTEE

During the past year, the CME Committee has functioned well with the excellent assistance of Joy Drennen from the SCMA. We welcomed new committee members, Bill Bates, Charles Johnson, Pete Dandalides and Don Bryant. The entire committee worked well together addressing the duties of accrediting and reaccrediting institutions for CME programs as well as putting together the Annual Scientific Meeting. It should be acknowledged that more work and effort went into preparing this year's annual Scientific Assembly because of a change in format. However, the committee did not shirk from this responsibility, hoping that physician participation and education will improve. As chairman, I congratulate committee members for a job well done.

With regard to SCMA recognition as the accrediting body in this state by the Accreditation Council for Continuing Medical Education (ACCME), our three-year reaccreditation period ends this fall, and we must submit our application and have a site visit by the Committee on Review and Recognition of the ACCME this summer. We feel confident that our past problems are, indeed, in the past and that we will again receive full reaccreditation.

Since our last report to this House of Delegates, we have accredited two new institutions as sponsors of CME for their staff physicians: Byrnes Medical Center in Columbia and Charter Hospital of Greenville. These two new accreditations make a total of ten facilities now recognized by the SCMA. The state's two medical schools and Hall Institute in Columbia are accredited by the ACCME. We are pleased that several other hospitals have recently expressed an interest in becoming accredited and are now in the process of completing their applications. We encourage others to do so.

In 1979, the SCMA House of Delegates voted that the SCMA would not be a provider of CME, with the exception of planning the Annual Meeting program. The House felt at that time that the SCMA CME Committee should (l) maintain proper accreditation of those facilities approved for CME credit; (2) assist in record keeping of the CME credits as a service to physicians in the state; and (3) not become involved in actual programming of medical meetings in competition with medical schools, hospital staffs, etc., since the committee's function remains in the area of supervising and assisting those institutions already accredited. In January of this year, the SCMA Board of Trustees reaffirmed this position. The SCMA CME committee is pleased to continue its stated purpose. With regard to planning our Annual Meeting scientific sessions, we have been able to secure credits for physician attendees by seeking joint sponsorship from the state's two medical schools and approved prescribed hours from the SC Academy of Family Physicians.

The role of CME in a practicing physician's professional life continues to be called into question. At a national level, ACCME has set CME policy to conform to strict criteria for accreditation. While many states have come to require CME for relicensure, South Carolina, as yet, has not done so. The SCMA CME Committee will continue to work hard to provide accredited centers for continuing medical education opportunities for the physicians of this state. In addition, we will continue to develop a quality program that will meet the practicing physician's needs during our annual meeting.

Respectfully submitted,
Gerard C. Jebaily, M.D., Chairman

THE ENVIRONMENTAL PRESERVATION AND PROTECTION COMMITTEE

The Environmental Preservation and Protection Committee was constituted per mandate of the SCMA House of Delegates. This committee is composed of interested members with broad statewide geographic representation. The members unanimously approved the following role and purpose of the committee:

The role and purpose of the committee shall be to use the resources and expertise of the SCMA to:

l) Provide the means to educate physicians, patients, and government regarding environmental concerns;

2) Provide a forum for the evaluation of the environmental hazards to the public health;

3) Actively pursue the environmental goals of the SCMA using all means at our disposal.

The committee also obtained endorsement of the following by the Board of Trustees, as official SCMA policy:

l) Encourage physicians to be spokespersons for environmental stewardship;

2) Encourage the medical community to cooperate in reducing or recycling waste;

3) Encourage physicians and the rest of the medical community to dispose of its waste in a safe and properly prescribed manner;

4) Enhance the role of physicians and other scientists in environmental education;

5) Endorse legislation such as the National Environmental Education Act to increase public understanding of environmental degradation and its prevention.

6) Encourage research efforts at ascertaining the physiological and psychological effects of abrupt as well as chronic environmental changes.

The committee also plans to organize a library at SCMA headquarters for environmental reference material and embark on a public relations effort consistent with SCMA policy. The first meeting of the committee was in September, 1990 and it is planned to meet at least quarterly. We hope, in time, to develop this committee into a recognized and respected resource for information on health matters relating to the environment.

Respectfully submitted,
Edward W. Catalano, M.D., Chairman

THE LEGISLATIVE ACTIVITIES COMMITTEE

Mr. Speaker, members of the House of Delegates, SCMA members and guests, it is my privilege to report to you on the activities of the Legislative Activities Committee this past year.

The committee's primary function is to review proposed legislation and recommend a position to the Board of Trustees of the association. Prior to the opening of the current legislative session, the committee met and considered legislation to be introduced by the SCMA as well as bills that were pre-filed for the 1991 session of the General Assembly. Some of the prefiled bills that were discussed at the December 12, 1990 meeting were:

S. 149 A bill requiring DHEC to license and certify hospitals and clinics performing abortions in SC. ACTION TAKEN: Form an ad hoc committee for further study.

S. 74 A bill requiring HIV testing of a person charged with the commission of crimes during which body fluids may have been transferred. ACTION TAKEN: Support at Level B.

S. 314 Mandatory Assignment. ACTION TAKEN: Oppose at Level A.

S. 49 Triplicate Prescription. ACTION TAKEN: Oppose at Level A.

One of the major pieces of legislation the SCMA is involved with this year is legislation concerning living wills, durable powers of attorney and the Adult Health Care Consent Act.

The SCMA will support a bill that has been drafted which would place a five cents user fee on cigarettes, which will be earmarked for Medicaid.

The SCMA Doctor of the Day Program continues to be a valuable service to the Legislature and to the SCMA. The committee is grateful to those of you who donate your time to serve.

On behalf of committee members and myself, I would like to thank you for the opportunity to serve on this very important committee.

Respectfully submitted,
James R. Pruitt, M.D., Chairman

THE MATERNAL, INFANT AND CHILD HEALTH COMMITTEE

Our committee has met quarterly since the 1990 meeting of the SCMA House of Delegates and has provided input to the SCMA Board of Trustees, DHEC, Health and Human Services Finance Commission, and the Maternal, Infant, and Child Health Council in the Governor's Office.

An issue which has been dominant in our discussions during the past year is substance abuse and pregnancy. Our committee adopted several statements which addressed this concern. We reviewed the March, 1990 ACOG opinion "Cocaine Abuse: Implications for Pregnancy" and adopted the four recommendations included in this opinion. The first of these recommendations states that all pregnant women be queried regarding past and present drug use at the time of their first prenatal visit. The other recommendations are specific to the care of a woman with a history of cocaine use.

In order to improve our ability to solicit this type of information from our prenatal patients, the SCMA helped sponsor a workshop on prenatal history taking skills regarding substance abuse. We have been briefed about the present study in our state which will determine the prevalence of substance use in pregnancy. Once these results are available, our committee will further study this issue.

Both our committee and the SCMA's Medical Ethics Committee worked on a statement regarding pregnancy and substance abuse. The SCMA Board of Trustees adopted the two committees' draft statement which was provided to the state Maternal, Infant, and Child Health Council. This statement should be helpful to physicians in the care of their patients and should provide guidance to the SCMA as we provide input to legislators and state agencies.

We received five maternal death certificates which we are in the process of reviewing.

On the pediatric side of our committee, DHEC has begun to implement fetal/infant death review at a local level working with physicians in that area. Our committee will continue to oversee this activity and offer our assistance and advice. We received information from DSS outlining their protective service policies for children with substance abusing parents. We also heard an excellent presentation from DHEC on childhood accident rates. Accidents account for 67% of childhood deaths in our state, which unfortunately has a childhood accident mortality rate 15% higher than the nation's.

In order to invigorate our committee, we adopted a new procedure this year whereby each committee member is asked to contact his/her colleagues between meetings to solicit their input as to the concerns which we should be addressing. This input has led to fruitful examination of issues.

We were saddened to learn of the death of Hal Rubel, M.D., who was the obstetrics representative of his region to our committee and a past committee chairman. Hal's concern and input will be greatly missed.

Respectfully submitted,
Ralph F. Principe, M.D., Co-Chairman
B. C. Pendarvis, Jr., M.D., Co-Chairman

THE MEDIATION COMMITTEE

The Mediation Committee of the SCMA met in March to review the pending complaints filed with the committee.

Thirty-nine complaints were received by the committee between April, 1990 and April, 1991. Of this number, four were non-members of the SCMA; (the committee has no jurisdiction in these cases, but urged the physicians to join SCMA. If they join or consent to review, the committee proceeds with the case.)

The new grievance procedure guidelines, adopted by the House of Delegates in 1990, have streamlined the procedure and made mediation committees of local component societies even more important. Some eight complaints were forwarded to local committees last year. The Mediation Committee compliments these local societies who ably handle these matters and we urge other component societies to form mediation committees.

I wish to thank the committee members and SCMA staff for their support this year.

Respectfully submitted,
Albert G. LeRoy, Jr., M.D., Chairman

MEDICAL ASPECTS OF SPORTS COMMITTEE

During the 1990 year, the committee on the Medical Aspects of Sports held meetings as well as the annual seminar during the state association meeting. The meeting in April, held in conjunction with the association, hallmarked the final introduction of the official preparticipation exam history questionnaire and its accompanying physical examination form. This, after several years of revision, was not only approved by the committee, but approved by the state high school league and was implemented during the 1990 year. During this same year the injury communication form was designed and completed. Board approval was given for funding to provide forms in triplicate to schools to monitor injuries and maintain a line of communication between coaches, parents, physicians and athletic trainers or teacher athletic trainers. Subcommittees were formed during the April meeting consisting of a Resolutions Committee, Program Committee, Athletic Trainer Committee, NC Sports Medicine Liaison and a Team Physician Committee. These were felt to be important in order to carry on some of the business of the committee without large meetings other than the two yearly meetings. Endorsement of the Palmetto Games was finally received after assurance was given that certain sponsors would not hinder the beneficial aspects of statewide competition.

Resolutions were formulated to be presented at the 1991 meeting. At the November 28 meeting held in Columbia, SC these resolutions were revised to express the committee's support for physical education in schools and for the healthcare curriculum in

South Carolina. The injury communication form was further revised and beginning in the spring of 1991 these will go into active use. They will be used full scale during the football season and then information will be collated to determine if these should be used at all schools throughout the state under the support of the South Carolina High School League. Throughout the year liaison was maintained with the state high school league through Pete Ayoub. Liaison was maintained with the State Department of Education, first with Ray Geddings and subsequently with his replacement, Paul Rawe. Liaison was also maintained with the South Carolina Athletic Trainers Association through Fred Hoover and Joe Kenny.

The presentation of the program for 1990, as organized by Dr. Dick Ward, was quite successful. Dick Ward was thanked for putting on a program and workshop entitled "Primary Care Physicians and High School Athletes." This was given Friday afternoon, April 27, and covered an update on risk management in sports, the preparticipation exam, problems seen in collegial athletes, teacher/athletic trainers and equipment for the sports trainer. This fit well with the session given on wellness on Thursday, in which members of the committee participated.

Coaching seminars will be planned and the initial phases to encompass three major sites in the state, Greenville, Columbia and Charleston, were outlined. The meeting was planned for the combined sports symposium with the South Carolina Chapter of the American Academy of Pediatrics which will be entitled "Problems Unique to Children in Sports." This will contain cardiovascular assessment for the child athlete, sprains and strains in youth sports, growth prediction and recommendations for weight training in contact sports and how to make every kid a winner in athletics.

The committee will continue to meet on a bi-annual basis with committee meetings during the year.

Respectfully submitted,
Frederick E. Reed, M.D., Chairman

THE MEDICAL ETHICS COMMITTEE

The Medical Ethics Committee of the SCMA continues to be one of the association's most active committees. Noted ethicists Nora Bell, Douglas MacDonald, Albert Keller and Stuart Sprague, non-physician members of the committee, continue to provide important support to the committee.

This year the Medical Ethics Committee has assisted legislative committees in dealing ethically with the problems of substance abuse and pregnancy, meeting with legislative subcommittee members and suggesting language which may become part of a new law dealing with the matter.

Working with the Physician's Risk Management Committee and the SCMA Board of Trustees, the Medical Ethics Committee drafted a statement on the "Physician as Expert Witness."

The committee has devoted a great deal of time discussing the ethical issues raised by various healthcare rationing proposals. In September, 1990 the committee held a three-day retreat in the North Carolina mountains to discuss the recently published book, *Strong Medicine,* by Paul Menzel. The committee spent over 18 hours examining this work that some say will establish ethical ground rules for the delivery of health care in the future.

The Medical Ethics Committee has also spent much time dealing with the complicated issue of organ and tissue donation and its effect on transplantation and the just rationing of healthcare services. The committee has developed several models for organ and tissue donation plans that would increase the supply of usable tissue and organs while maintaining a dignified respect for various religious, social, and ethical views about the organ donation.

During this discussion, the need for a statewide educational effort regarding transplantation led to the suggestion that a symposium on medical, socioeconomic and ethical aspects of organ and tissue transplantation be prepared for *The Journal of the South Carolina Medical Association.* This suggestion was developed further, and the symposium has now been completed and will be published as a special issue of *The Journal* this summer.

The "Principles of Medical Ethics of the South Carolina Medical Association," adopted by the House of Delegates in 1988, continue to serve as the basis for the committee's deliberations.

Ethics education continues to be a part of the committee's mission. Committee members will participate in a plenary CME session at this year's annual meeting on issues raised by death and advance directives such as living wills. Members of the committee have also participated in seminars on the Death with Dignity Act, with one member appearing before a legislative committee considering amendments to the present act.

The committee appreciates the support it has received from the SCMA Board of Trustees and solicits input from members of the association about issues it should address in the future.

Respectfully submitted,
John M. Roberts, M.D., Chairman

THE MEMORIAL COMMITTEE

In communities across our state, voids have been created by the passing of distinguished physicians who kept their oaths and served humanity well. Their honor remains, however, in the appreciation and memories of grateful people whom they served in a self-giving way.

We, the members of the South Carolina Medical Association, join in adding our appreciation for these colleagues who now rest from their labors. We honor the contributions that they made in upholding the high standards of our profession with integrity, proficiency and compassion; and we add our sympathy for loved ones and patients whose lives are most affected by these deaths.

After their names have been read, we shall stand for a moment of silence out of respect for the following: J. Gavin Appleby, M.D., St. George and Columbia; C. R. F. Baker, M.D., Sumter; Fiametta A. Barchiesi, M.D., Rock Hill; John J. Curry, M.D., North Myrtle Beach; R. B. Donovant, M.D., Edgefield; William F. Dukes, M.D., Orangeburg; Urban R. Finnerty, M.D., Myrtle Beach; James C. Hall, Sr., M.D., Gaffney; Donald H. Harwood, M.D., Columbia; Penrod G. Hepfer, M.D., Columbia; Harold P. Hope, Sr., M.D., Union; Paul T. Hopkins, M.D., Columbia; James G. Jeanes, M.D., Lyman; George E. Lucas, Sr., M.D., West Columbia; W. S. Lyles, M.D., Winnsboro; James P. McNamara, M.D., Greenville; William J. Moore, M.D., Anderson; Julian P. Price, M.D., Florence; Louis D. Rhodes, M.D., Estill; Harold R. Rubel, M.D., Spartanburg; Michael P. Russell, M.D., Charleston; John A. Siegling, M.D., Mount Pleasant; Oscar R. Stribling, M.D., Fountain Inn; Harry C. Taylor, Jr., M.D., Georgetown; Frances L. Timmons, M.D., Columbia; James C. Vardell, M.D., Columbia; W. M. Waters, III, M.D., Greenville; Edwin L. Wilds, M.D., Clinton; Augusta Willis, M.D., Cottageville; and Edwin R. Worrell, M.D., Columbia.

Respectfully submitted,
W. Rion Dixon, M.D., Chairman

THE OCCUPATIONAL MEDICINE COMMITTEE

The SCMA Committee on Occupational Medicine held quarterly meetings during 1990. *The Schedule of Fees for Physicians and Surgeons for Services Rendered under the South Carolina Workers' Compensation Law* was completed in the fall of 1990. Many hours were contributed to this effort by all members of the committee.

Physicians' fees which seemed inappropriate to the Medical Department of the Industrial Commission were reviewed at each meeting, and recommendations were made to the commission on an individual case basis.

The committee hosted a dinner meeting with the commission during the year. As usual, this meeting prompted very frank and very productive discussions of our mutual problems and concerns relating to providing the best possible medical care for South Carolina's injured workers at the lowest possible cost.

During 1991 the committee will attempt to update the complete orthopaedic section of the Fee Schedule as well as the new 1991 CPT codes.

The committee reviewed aspects of reimbursement for private office surgical suites. The committee recommended to the SCMA Board of Trustees that they request the SCWCC pay for private surgical suites if they have been reviewed and certified by DHEC.

Another continuing concern of the commissioners are physicians who do not accept workers' compensation cases. I would like to urge all South Carolina physicians to treat injured workers. Toward this effort the staff at the SCMA office has been collecting a list of physicians who are willing to treat these patients.

Mr. Mike LeFever, Executive Director of the South Carolina Workers' Compensation Commission, and I presented a talk to the York County Medical Society in October, 1990. We discussed the work of the SCWCC and the Occupational Medicine Committee. The committee and the SCWCC are always available to talk to county medical societies.

We are also willing to participate in a panel discussion between the SCWCC commissioners and physicians during an SCMA Annual Meeting.

The SCWCC, in conjunction with the SCMA, will hold the 12th Annual Medical Seminar, April 12-14, 1991, at the Myrtle Beach Hilton. I urge all physicians to attend this important meeting.

In summary, 1990 was another busy year for the committee in fulfilling its role as liaison between the South Carolina Medical Association and the South Carolina Workers' Compensation Commission, as well as a resource group to the commission as it attempts to fairly administer the Workers' Compensation Law of the state of South Carolina.

I would like to thank all committee members, SCMA staff and SCWCC staff for their hard work this past year.

Respectfully submitted,
Marion F. McFarland, III, M.D., Chairman

THE PEER REVIEW COMMITTEE

Although our committee has not met in its entirety in several years, we continue to perform peer review and offer our advice through subcommittees and individual committee member review of medical records and policies. During this past year, a subcommittee performed a pattern of practice review for the Health and Human Services Finance Commission. Following our review of office records, our subcommittee met with the attending physician and representatives of the Finance Commission to discuss our questions and concerns. Our recommendations were then submitted to the SCMA Board for approval and forwarded to the Finance Commission.

The SCMA has been fortunate to have been given the opportunity to provide review of proposed local Medicare coverage policies prior to implementation by the Medicare carrier in South Carolina, BC/BS. Members of our committee are mailed the proposed policies, which pertain to their specialty, and are requested to review and comment on these within 30 days. Members of our committee have also received referrals from the Department of Insurance which requests our advice regarding disputes between insurance companies and physicians.

We continue to offer our review services to hospitals to assist them in their credentialling and peer review activities. This has been of great assistance, especially to smaller hospitals, where there is a lack of available peers to perform this essential review. Because it is so important for hospital peer review activities to avoid even the appearance of being potentially noncompetitive and therefore subject to antitrust actions, this service of our committee is greatly appreciated by hospitals and medical staffs in our state.

Respectfully submitted,
Charles Sasser, M.D., Chairman

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AIR FORCE

THE PHYSICIANS' ADVOCACY AND ASSISTANCE COMMITTEE

The committee continues to be quite active. There have been a number of contracts with physicians with impaired function and a number of interventions by committee members resulting in treatment and contractual arrangements with impaired physicians. A significant number of physicians who have been under contract and monitored by the committee have completed their term of supervision and have had their contracts closed by the committee. Some of the physicians who have completed their contracts have become active members of the Physicians' Advocacy and Assistance Committee. The committee has also been instrumental in influencing some of the physicians with whom we have been working to become members of the SCMA.

The chairman has met with the Board of Trustees twice this year for the purpose of informing the board of the activities of the committee. The board once again approved an interim budget for the committee. As of the end of 1990 the Joint Underwriters Association has undertaken the financial support of the PAAC as a part of its Risk Management Program. The support will be reviewed annually and the plan is for continuing support. The committee is grateful for this support.

The committee's lab professionals are both doing an outstanding job.

The regional treatment teams continue to be very active and continue to work with their peers as advocates. There are active Caduceus Club physician groups in the Charleston, Greenville-Spartanburg, Florence and Columbia areas.

With help from the SCMA legal staff, the committee has reviewed and revised its contracts and combined both contracts into one document. The terms of the contract remain 60 months or the duration of any State Board of Medical Examiners' order.

During the past year, the chairman and committee members have met with auxiliary groups and others to speak on the "Impaired Physician."

The most recent activity was participation of several members in a day-long addiction seminar sponsored by Self Memorial Hospital in Greenwood, SC. The seminar was a big success and was well attended by physicians, nurses, addiction counselors, etc. The committee expects to participate in other such endeavors in the coming months.

The committee is very proud of developing and distributing a brochure entitled "Guidelines for Hospital Medical Staffs and County Societies" concerning physician impairment. The publication was developed and bound "in house" and has been distributed to all hospitals and county medical societies in South Carolina for use in developing local programs.

I wish to thank the Board of Trustees, the committee members, the SCMA staff, and the JUA for their support and work this past year.

Respectfully submitted,
Hugh V. Coleman, M.D., Chairman

THE SCMA/AHA-SC AFFILIATE JOINT COMMITTEE ON CARDIAC REHABILITATION

At the present time there are 21 certified cardiac rehabilitation programs in the state. They are in locations throughout the state as follows:

Anderson Memorial/Anderson
Bruce/Florence
Conway
Georgetown Memorial
Grand Strand/Myrtle Beach
Greenville Memorial/ABMH/Greenville
Kershaw County/Camden
Lancaster
Loris Hospital/Loris
Marion Memorial
Marlboro Park Hospital/Bennettsville
McLeod/Florence
Mullins Hospital
MUSC/Citadel/Charleston
Providence/Columbia
Roper Hospital/Charleston
Spartanburg Regional
St. Eugene/Dillon
St. Francis/Greenville

USC/RMH/Columbia
Trident/Charleston

All of the above programs meet the committee's established criteria for certification. The Lexington Hospital has been granted provisional certification and should be appropriately certified later this summer.

The statewide Cardiac Rehabilitation Association has been formed and meets regularly. This association is affiliated with the National Cardiac Rehabilitation Association. The Cardiac Rehabilitation Association receives staff support from the SCMA.

I would like to thank the committee members and the SCMA/AHA-SC Affiliate staffs for their invaluable help this past year.

Respectfully submitted,
Christie B. Hopkins, M.D., Chairman

THE PRIMARY CARE/ MEDICAID AND INDIGENT CARE COMMITTEE

The SCMA's Primary Care, Medicaid, and Indigent Care Committee has continued to enjoy a positive relationship with the Health and Human Services Finance Commission, which has been most receptive to our input.

Examples of our success in improving the Medicaid program include: the ability to call in prescriptions for Medicaid patients; a tremendous improvement in "TPL" (third party liability) which greatly reduced the frequency in which the Finance Commission will seek refunds from physicians when they learn patients have other insurance; and improvements in the auditing procedure.

We appreciate the House of Delegates' acceptance of the resolution submitted by our committee last year which asked physicians to care for their fair share of Medicaid patients and requested the county medical societies to investigate and address any local Medicaid access problems. We wrote all the county medical societies and received information from them about their efforts to study the Medicaid access situation in their county. At the February, 1991 SCMA Leadership meeting, the Columbia Medical Society presented an excellent explanation of their Medicaid access program.

Following its review of the recommendations of the DHEC Family Practice, Pediatric and Obstetrics task force, the SCMA Board requested our committee to comment on these recommendations and make suggestions of our own. Based on our suggestions, the SCMA Executive Committee agreed to support higher Medicaid reimbursement for physicians in underserved areas or who have a large Medicaid practice. The Executive Committee agreed that a meeting should be arranged with the medical schools and residency programs to review the retention rates of these programs and their success at placing physicians in rural areas. If the private sector is unable to address the problem of rural health delivery, it was the feeling of the Executive Committee that the SCMA could support the expansion of a public delivery system in the rural areas under the direction of DHEC.

We are monitoring the state's Medicaid budget and have offered our assistance to the Finance Commission in identifying areas which, if reductions in reimbursement or services are necessary, are a lesser priority than primary care services. The SCMA has written the Finance Commission that all efforts should be made to preserve obstetric, pediatric and family practice rates in order to maintain the trust private physicians have placed in the program.

Our committee was deeply saddened by the death of Gavin Appleby, M.D., and we will greatly miss his humor, insight, and concern for Medicaid patients. Gavin served our state and our physicians with dedication and caring.

Respectfully submitted,
Roger A. Gaddy, M.D., Chairman

TASK FORCE ON AIDS

The SCMA AIDS Task Force has been quite active this year, especially in recent months on account of several issues requiring immediate attention.

The case of a Florida dentist who allegedly infected three patients has caused a flurry of policymaking decisions by various organizations, including the American Medical Association, the American Dental Association, and the Centers for Disease Control. There has been increased interest in the testing of patients and healthcare workers. An ad hoc committee was recently convened by Dr. Edward Catalano, Chairman of the SCMA Board of Trustees, to address proposed legislation that would allow for testing of a source person to whose blood another person had been exposed. The committee made recommendations suggesting that the bill be revised in order to prevent post-exposure testing of anyone (both patients and physicians) without sound reason. The task force also supported the concept of Bill S.74, which would require HIV testing of a person charged with committing a crime during which body fluids might have been transferred.

The task force continues to address the issue of informed consent for HIV testing. The following position (not yet presented to the Board of Trustees) was put forth:

> The SCMA encourages consent in all situations and strongly recommends written consent (unless written consent will harm the well-being of the patient) or implied consent for HIV testing as a standard of care for all screening purposes.

We recognize that this issue is fraught with complexities and emotional overlays. We welcome input from all SCMA members and look forward to dialogue especially with members of the Ethics Committee.

I take this opportunity to thank SCMA members for the extremely gratifying response to the survey on barriers to care of HIV/AIDS patients. In just two mailings, we received a 53% response—an exceptionally good return. The survey was developed jointly with the University of South Carolina School of Public Health. Michael E. Samuels, Dr. P.H., has shared with the AIDS Task Force the preliminary results from this survey and will continue to update us with the findings.

The SCMA Board of Trustees requested that the task force develop guidelines for management of HIV infection for our state's practitioners. We hope that our manuscript, which will be published in the March 1991 issue of *The Journal,* will be helpful.

Three new members were added to the task force this year: Burnett W. Gallman, M.D.; Janice L. Coleman, M.D.; and Michael E. Samuels, Dr. P.H. We have invited various guests to our meetings to share with us perspectives and to obtain information and recommendations. What models for the care of HIV/AIDS patients are most relevant to South Carolina? What role should the SCMA assume in the various aspects of this multidimensional challenge to our healthcare system? We welcome suggestions from all SCMA members.

Respectfully submitted,
Charles S. Bryan, M.D., Chairman

THE PUBLIC RELATIONS COMMITTEE

The SCMA has continued to promote the public image of South Carolina physicians and to increase awareness of the SCMA and its activities. This year's highlights include the following:

—The auxiliary and staff have continued to promote the Health Van including an article in *Sandlapper* scheduled for publication in the May-June issue.

—Three new public service announcements were purchased and tagged with the SCMA logo and sponsorship by the SCMA and auxiliary. The topics are protecting the environment, studying the sciences, and organ donation.

—The SCMA was also involved in a cooperative effort with the Statue of Nicotina Tour. This anti-smoking campaign was in response to the Philip Morris Bill of Rights Tour.

—A new membership poster was produced and distributed to all hospital administrators.

—Staff worked with other agencies to publicize the Healthy People 2000 local and statewide conferences. These conferences are to focus attention on the National Health Promotion and Disease Prevention Objectives for the next decade. The initiative was launched in Washington, DC by Dr. Louis W. Sullivan, Secretary of Health and Human Services, last September.

—Work is in progress on publicizing the AMA-ABA substance abuse program in the schools. A press conference is tentatively planned to coincide with the students' return to school in the fall.

—A cooperative effort between members, staff and *The State* newspaper has been undertaken to publish reviews of healthcare books.

Staff has continued working to promote SCMA involvement with several committees such as the AIDS Training Network, Childhood Injury Reduction Project, Council on Elder Affairs and the Minority Health Task Force.

Establishing and cultivating media relations has also been a priority this year. Members have been very willing to talk with the media and have covered such topics as AIDS and surgery, Medicare, Medicaid, substance abuse by pregnant women, living wills and other important healthcare issues. With the war in the Persian Gulf, the SCMA was able to work with reporters on stories involving physicians serving their country and how the state has been affected by their absence.

Continued recognition of exemplary reporting is given through awards to journalists at the annual meeting. This year establishes the presentation of the community service award as an annual event. This honor recognizes the efforts of a county society to its community above and beyond the call of duty.

Information on all types of healthcare topics is made available to members through several resources. The SCMA newsletter provides updates on Medicare and Medicaid, new regulations, upcoming conferences and other pertinent information. We are also constantly expanding our library with articles, resource books and video tapes. Another source of information has been the regular mailings to board members of news clippings from North and South Carolina papers.

We appreciate the efforts of all members, auxilians and staff in realizing the objectives of the committee. We will continue to develop new programs and services in this area. Your comments and suggestions are welcomed by the staff.

Respectfully submitted,
John W. Simmons, M.D., Chairman

THE SCMA/JUA PHYSICIANS' RISK MANAGEMENT COMMITTEE

This has been a good year for the Physicians' Risk Management Committee. We were able to announce a substantial reduction in both JUA and PCF premiums during the year and have reason to feel that another reduction in JUA premiums may take place this year. We cannot afford to relax our efforts at risk prevention, and programs throughout the year are planned.

As was announced in the last medical liability bulletin, a workshop for young physicians beginning their practice will be held in Charleston on April 24, 1991. This should prove to be very beneficial to them; and if response is sufficient, additional workshops will be planned later in the year.

The regular risk management program at the Annual SCMA Meeting is scheduled for Friday, April 26, 1991. We have secured another outstanding speaker this year.

We have just initiated a "Buddy" system where we find another physician to support one who is a victim of a lawsuit. This should prove to be of significant help in many ways for the involved physician.

We would like to express the committee's sincere gratitude to all the South Carolina physicians who have worked so hard and have been so cooperative in support of the efforts and the programs of the committee throughout the year.

I would like to express my appreciation for all the advice and help we have received from Mr. Cal Stewart and for the continuing untiring support from Ms. Joy Drennen.

It is a real pleasure to serve on this committee with its dedicated members.

Respectfully submitted,
Euta M. Colvin, M.D., Chairman

REPORT OF THE EDITOR OF *THE JOURNAL*

Shortly after last year's Annual Meeting, the editorial board of *The Journal* adopted the following mission statement:

> The mission of *The Journal* is to advance the art and science of medicine; to promote the ideals of the South Carolina Medical Association; to encourage scholarship and good will among South Carolina physicians; and to disseminate information specifically applicable to the health care of South Carolinians.

This statement reflects what we consider to be a unique role for our journal: to serve South Carolina authors and readers, the SCMA, and the people of South Carolina.

During 1990, we revised our information for authors and formulated new guidelines for guest editors of symposium issues. Two such issues were published, one dealing with alcoholism and other drug abuse and the other dealing with cancer. We continue to seek a mix of original scientific articles and special articles dealing with socioeconomic, historical, or ethical issues. We also continue to encourage submissions by practicing physicians who, we feel, have a great deal to write about if too little time to write.

Our editorial board has been quite active, participating in all major decisions. Most manuscripts are sent out for review. Our covers during the past year have been entirely the work of Betty Newsom of the Waring Historical Library at the Medical University of South Carolina. Her illustrations and commentary amount to a pictorial history of medicine in South Carolina. Last—and by no means least—I acknowledge my enormous debt to our managing editor, Joy Drennen, who carries out the day-to-day operations of *The Journal* skillfully, graciously, and as cost-effectively as possible.

Finally, I thank the SCMA and the Board of Trustees for the privilege of serving you as Editor.

Respectfully submitted,
Charles S. Bryan, M.D., Editor

REPORT OF THE SCMA DELEGATION TO THE AMA

The AMA Delegation is pleased to have served you during the past year. The members include John Hawk, Randy Smoak, Don Kilgore, Walt Roberts, Charlie Duncan, Gavin Appleby and Dan Brake as delegates and alternates. The delegation was saddened by the loss of Gavin during this past year. He was a very valuable contact in the House of Delegates, particularly with the family practice contingency. Dan Brake was appointed to attend the Interim Meeting in December to keep us at full strength. As you know, in addition to the delegates and alternates, we send the Chairman of the Board, Ed Catalano; the President, John Simmons; and the President-Elect, Chris Hawk, in order to have representatives at all of the reference committees.

The AMA Annual Meeting, of course, was held in Chicago in June and the Interim Meeting was in Orlando in December.

The delegation has been very active during this past year and involved in several resolutions which were taken from the SCMA House of Delegates and which are now in the process of being acted upon by the board. The respective delegation members were quite active in the House of Delegates Reference Committees and on the House floor itself, with some very positive input in these two forums.

John Hawk retired after the December meeting after serving so effectively on our behalf for many, many years. John was on the Constitution and Bylaws Committee for nine years and for the last two he served as chairman. I don't know of another delegate who was any more highly regarded or better known than our own John Hawk. We hated to see him leave the delegation to which he'd been such a great contributor, but time marches on for all of us.

At the Interim Meeting in December our delegation held a reception honoring John Hawk for his many years of service. He and Nancy were heartened by the hundreds of delegates and wives who attended to thank them for their contributions to the AMA over the years. This was a most fitting occasion and I wish all of you could have had an opportunity to witness this.

Walt Roberts was elected to the Steering Committee of OSMAP (Organization of State Medical Association Presidents) and Randy Smoak completed his two years as Chairman of AMPAC.

Dr. Julian Price died during the past year and he is the only person from South Carolina ever to serve as an AMA Board of Trustee member as well as Chairman of the Board.

The delegation made a decision in June that the timing was most opportune for me to make a bid for the Board of Trustees. Following this decision, the SCMA Board of Trustees endorsed his candidacy and the process has been set in motion to carry out this rather large undertaking, hopefully with a very successful outcome in June, 1991.

The delegation will continue to work diligently on your behalf and we welcome the input of any SCMA member at any time. We are particularly pleased that the Young Physicians Section, Hospital Medical Staff Section, Residents and Students have been active at the AMA in the past year and encourage their continued participation. The Auxiliary has been quite active also and we certainly always enjoy our opportunities for interaction with them.

Respectfully submitted,
Randolph D. Smoak, Jr., M.D., Chairman

REPORT OF THE EXECUTIVE VICE PRESIDENT

It is my pleasure to report to the House of Delegates on the activities of the South Carolina Medical Association this past year.

Let me first express my sincere appreciation for the hospitality shown to me as I accompanied the president on his county visitations. Each and every visit was enjoyable and I have felt the visits to be beneficial to both the SCMA and the counties.

This year two major changes have been made in the organizational structure of the SCMA. The South Carolina Medical Care Foundation was dissolved as a corporate entity and SOCPAC was incorporated as a separate tax entity. In the case of the foundation, it was originally created as an organization to hold government contracts such as the PSRO and PRO. In the last few years, the foundation has been inactive and this led to the decision to dissolve it. SOCPAC, for the years of its existence, has been a committee of the SCMA. It was necessary to incorporate in order to comply with recent changes made in the state ethics laws.

There has been little activity in the Legislature due to the fact that May 1990 marked the end of the two-year session and we are just into the 1991 session. At the time of this report, there is very little legislation of concern to the SCMA. The impact of Operation Lost Trust is not fully known at this point, but changes in the way we operate as a lobby will definitely be necessary, as legislation is enacted to set the ethical standards for the Legislature. SOCPAC was active in the 1990 primaries and general election.

As I did last year, I am incorporating the report on the impact of tort reform into this report. I am pleased to report that the premiums for the Joint Underwriting Association and the Patients' Compensation Fund will be reduced for the second year in a row. The JUA has approved a twenty percent (20%) decrease and this will impact the PCF as the rates relate to the JUA. There was an attempt in the Legislature this past year to overturn, by statute, a decision by the South Carolina Supreme Court which held that punitive damages are not recoverable in an action based solely upon a theory of strict liability. This bill, S.924, was defeated. The SCMA was successful in getting immunity from liability in the Adult Health Care Consent Act which will protect physicians who must rely on the decisions of others when treating patients who are incapacitated and unable to consent for themselves. We are currently working on legislation that will provide immunity for physicians in the Living Will Statute when a physician certifies that a patient has a terminal condition and is expected to die in a relatively short period of time. The professional liability climate in the state is as good as anywhere and better than most places, and the SCMA will continue a high level of effort to keep it that way.

There has been significant activity this year in the areas of healthcare costs, access to care and quality of care. Two legislative committees studied the healthcare delivery system, one appointed by Senator Saleeby and one appointed by Senator Leatherman. In addition to the two legislative committees, there was also the Healthy Futures Report of the South Carolina Hospital Association and the actions taken by this House as a result of the Health Care 2000 Report adopted last year. SCMA staff and officers have participated in all these activities.

Since the last annual meeting, the SCMA has conducted an evaluation of the progress made by the association in achieving the goals that were adopted in 1984 as a result of the McManis Report. McManis and Associates assisted the board in this evaluation and the results indicate that the goals have been achieved. As a result of the self-examination, some changes are being made to position the association for the next five years so that continued growth and progress will be achieved.

The SCMA and subsidiaries remain fiscally sound with reserves at the required level, and cash flow is adequate. The tax problems, as reported by Dr. Wilson in the MIT report, will have no adverse effect on the Members' Insurance Trust other than having to make the payments to the IRS for the taxes owed and interest. We have selected a new auditing firm and are pursuing the former firm, Ernst & Young, to recover the money paid, on the basis of had we known of the liability we could have adopted strategies to avoid taxes completely. As directed by this House last year, we will be evaluating the need to implement the third phase of the membership dues increase once the final figures for this fiscal year are available.

Finally, on behalf of the SCMA staff and myself, I want to express our appreciation to the membership and the leadership for the outstanding support we have received this year.

Respectfully submitted,
William F. Mahon, Executive Vice President

REPORT OF THE SCMA MEMBERS' INSURANCE TRUST

The SCMA Members' Insurance Trust (MIT) completed the past fiscal year with a deficit of around $100,000. The deficit is mainly due to a transfer of $460,000 to our reserve for incurred but not reported claims (IBNR). This IBNR reserve now stands at one million dollars and the board has voted to add another $600,000 to it at the end of this year in order to take advantage of the maximum amount allowed by law for tax purposes.

In November, our auditors, Ernst & Young, notified us that they had made an error in our tax returns back to 1985 and that we had a tax liability that included interest and penalties. The auditor has agreed to pay all penalties but accepts no responsibility for the taxes or interest which amount to $200,000. The MIT has employed legal counsel and negotiations are continuing with Ernst & Young to recover additional damages that the MIT board feels it has incurred.

In August of this past year, the board employed a national actuarial firm, Martin Segal and Company, to study our rates and recommend any necessary changes. The actuaries recommended that rates be increased by 25 percent on March 15, 1991. The board voted to follow the recommendation and the rate increase has been put into effect. The rates were last increased in December of 1989 and there have been only two increases in the past three years.

The plan has continued to grow and I would encourage all SCMA members who are not currently utilizing the MIT to take a look at it and compare it to your existing health plan. The MIT is for physicians, their families and employees, and as long as you are a member of the SCMA you cannot be dropped.

In summary, I am pleased to report that the MIT is in excellent shape and I anticipate that it will remain fiscally sound in the future.

Dr. John Rheney and I are completing our terms on the board and I am sure I speak for both of us in thanking the SCMA for giving us the opportunity to serve you on this most important board. I would also like to thank the other members of the board and the staff for their hard work this past year.

Respectfully submitted,
Gerald A. Wilson, M.D., President

REPORT OF THE SOUTH CAROLINA INSTITUTE FOR MEDICAL EDUCATION AND RESEARCH (SCIMER)

The South Carolina Institute for Medical Education and Research will award 17 scholarship grants at the 1991 Annual Meeting of the South Carolina Medical Association. Twelve scholarships will be awarded jointly with the SC Medical Association Auxiliary to six students from each of the two medical schools in South Carolina. Other scholarships to be awarded are the Stuckey Scholarship to a student from Bamberg County; two scholarships contributed by a cardiology group to students from upstate counties; and the Conway Hospital Medical Staff Scholarship to a student who is a resident of Horry County. The final award will be presented to a medical student for a research project judged best of entries for student research.

By means of new ideas to inform the medical students of the scholarships awarded by SCIMER, we are endeavoring to increase awareness of the scholarships and of the student component of SCMA. This year we will send a letter to each student at both SC medical schools emphasizing the monetary awards available for research/medical essay competition and other scholarships.

Contributions by SC physicians to SCIMER, primarily by the annual dues billing, have allowed the board to increase the number and amount of the scholarship awards. All contributions are welcomed and will be acknowledged as a memorial or honor, as requested. The committee sincerely appreciates your support of the scholarships and other educational activities by your generous donations.

The Leonard Douglas Memorial Lecture will be presented to the House of Delegates meeting by Mr. Gerald McManis on the topic, “Health Care 2000: Challenges and Opportunities.” Mr. McManis is president of McManis Associates, Inc., a management and research consulting company.

I would like to express my appreciation to the Board of Directors of SCIMER for their diligent work and interest in the activities of SCIMER, and to Mr. Bill Mahon and Ms. Ann DePalma for their outstanding staff support.

Respectfully submitted,
Eloise A. Bradham, M.D., President

REPORT OF THE SOUTH CAROLINA POLITICAL ACTION COMMITTEE

The South Carolina Political Action Committee (SOCPAC) has completed the calendar year 1990 with a membership of 1002. This is a decrease in membership of 16 from the previous year.

SOCPAC participated in the 1990 state primary and general elections including the statewide races for governor and lieutenant governor and in both these races supported the winning candidate. In the House races SOCPAC again participated in most all of the primary and general election races and roughly 90 percent of the candidates supported by SOCPAC were elected.

The impact of Operation Lost Trust on SOCPAC has not yet been fully assessed but in response to a change in the rules of the SC House of Representatives, we have incorporated SOCPAC as a free standing corporation to make it unique from the SCMA. Your SOCPAC Board will keep abreast of all changes in both rules and laws and comply with them.

I would like to take this opportunity to encourage all of you who have not become members of SOCPAC to do so. It is only through our support that we can assure that candidates who share our philosophy will have the resources to inform others of their stand on issues and to win.

Many thanks to the SOCPAC Board and staff for all the assistance they have given me this past year. On behalf of the SOCPAC Board, I wish to thank you for giving us the opportunity to serve on this most important board.

Respectfully submitted,
Frank W. Young, M.D., Chairman

REPORT OF THE PRESIDENT OF THE SCMA AUXILIARY

It has been an honor and a privilege to serve as the 68th President of the South Carolina Medical Association Auxiliary. Members of our organization possess many talents and capabilities which they so willingly share with their communities. Auxilians have a deep love and concern for their fellow man. During the past 67 years a high standard of responsibility and commitment has been set and this year we continued that tradition through our many projects and programs throughout this fine state. Collectively, we achieve what no one single person can do.

The South Carolina Medical Association Auxiliary promotes medical legislation. We are a community resource in the health field. We develop coalitions and provide community leaders. We identify critical community needs, develop programs and unselfishly share them with others. Our programs continue to grow with education as our main focus. We provide support groups for our medical families and we are expanding their efforts. The monies raised for AMA-ERF are praiseworthy as we continue our commitment to insure quality medical education.

I am deeply indebted to the SCMA Board of Trustees for their support and unfailing loyalty to our auxiliary. I especially thank SCMA President, John Simmons, M.D., for his assistance and encouragement this year. By working together the SCMA and the SCMA Auxiliary form an extraordinary team ready to embrace the challenge of the future in the health field.

The auxiliary is a special organization. We are recognized as one of the nation's leading volunteer organizations. The accomplishments of this past year provide us with a vision for the coming year and into the future. Our auxiliary will continue to grow and share its unique abilities with our fellow man.

Respectfully submitted,
Betsy Terry (Mrs. Lewis N., Jr.)
President, SCMA Auxiliary
1990-91

REPORT OF THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

HIV/AIDS Cases: As of December 31, 1990, 1,217 AIDS cases and 4,490 HIV-infected individuals had been reported to DHEC. Currently, about 30 new AIDS cases and 100 new HIV infections are being reported each month.

HIV Counseling, Testing and Partner Notification: Our free confidential counseling, testing and partner notification services are thought to be very cost-effective and have prevented AIDS cases. In 1990, over 1,800 named partners of HIV-infected persons were investigated. Of these, 260 were newly identified cases. To illustrate the savings, we conservatively assume that if no partner notification was done in 1990 and each of the 260 previously unidentified positive persons have infected just one other person in their lifetime, 260 new HIV infections may have been prevented by this activity, an estimated savings of at least $11,700,000 in healthcare costs in South Carolina.

Public/Private Partnership for AIDS/HIV Prevention and Treatment: As the number of new cases of HIV-related disease and AIDS continues to increase in the years ahead, the partnership between DHEC and the private medical community is critical to providing needed preventive and treatment services to persons with HIV disease and conducting partner notification services to facilitate early disease detection and provide available therapy. DHEC's counseling, HIV and CD4 testing, partner notification and Retrovir programs are available for referral of appropriate private medical patients.

Pregnant HIV Positive Women: Of particular concern is the increasing number of women in South Carolina with HIV infection. As of December 1990, the prevalence of HIV-infected women delivering newborns increased 60 percent from one year ago. Over the past 18 months, 125 HIV-infected mothers gave birth; 30-40 percent of their babies will be infected.

AIDS/HIV Health Care Services Plan Development: For the past year, DHEC, the USC School of Public Health, Health and Human Services Finance Commission, and the Palmetto AIDS Life Support Services have directed the development of a statewide and regional model plan for providing care and support to persons with AIDS and HIV infection. I want to thank those of you who participated on one of the numerous working committees or filled out the questionnaire that was jointly sponsored by the SCMA and the planning group. While the plan itself does not provide funding, it does detail the scope of services needed, and how they could be integrated. If and when the federal government adequately funds the Ryan White Act, South Carolina will be ready to properly utilize the funds. In the interim, many elements of the plan can be implemented without additional funding.

Occupational Exposure to HIV: DHEC has developed a protocol to make AZT available to DHEC employees with occupational exposure to HIV. You may wish to become familiar with the protocol and the issues surrounding provision of prophylactic AZT as one of our DHEC employees may ask for your management of their case. You can get information about the protocol from Dr. Robert Ball at 737-4040.

Tuberculosis and HIV Infection: The relationship between HIV infection and tuberculosis has come to the forefront in the last few years. Our Tuberculosis Control Division and AIDS Program work closely to register matching activity. Since 1983, there have been 56 patients with both tuberculosis and AIDS. In addition, at last count there are another 34 tuberculosis cases who are HIV infected. All tuberculosis cases and infected persons are offered HIV testing and counseling and all HIV positive persons are tuberculin skin tested.

Syphilis, Gonorrhea and other STDs: In 1990, South Carolina reported the highest syphilis morbidity case load ever with 1,965 primary and secondary syphilis cases reported to DHEC. Last year, I reported to you that some of our health departments were using the drug ceftriaxone for treating gonorrhea because of the growing problem of penicillin resistant gonorrhea. Now, all South Carolina health departments are using ceftriaxone as recommended by the Centers for Disease Control (CDC). With STDs increasing in our state, it is more evident than ever that public health must continue to work closely with the private medical community to challenge this growing problem.

Maternal and Child Health Awards: Several private physicians were honored by DHEC during our annual Maternal and Child Health Awards ceremony in December for outstanding leadership and exemplary services to South Carolina's pregnant women and children.

Family Planning Services Expansion: The South Carolina Legislature increased state support to the family planning program by approximately $1,000,000 this year. That funding is making subsidized family planning care possible for thousands of women. Some of the funds are being used in contracts with private physicians and primary care centers.

Case Management for Pregnant Women: We have been successful in involving the private sector in planning for case management models in several communities and more private physicians are seeing Medicaid women. The progress is especially notable in Greenville and Charleston. Case management services for pregnant women are now available in 24 counties, including all of the "anchor counties."

Hotline to Improve Access to Prenatal Care: Our First Nine Care Line, the hotline for pregnant women, has provided coordination with the Governor's "Caring for Tomorrow's Children" program as well as improving access to care. It has helped thousands of women with prenatal care needs.

Women, Infants and Children Supplemental Food Program: During 1990, the WIC program increased to an all time high, from 76,000 to 103,000 participants. South Carolina ranks 16th in the number of patients served among 85 WIC projects, while ranking sixth nationally in the percent of need met for all patients. This past year saw an aggressive effort to provide services to working mothers via evening and other special clinics, as well as an impressive and successful effort to increase the incidence of breast-feeding among the WIC population. There was an increase of 68 percent in breast-feeding by WIC participants in 1990 .

Enhanced Perinatal Care: Since 1989, in line with the recommendations of the Obstetrical and Pediatric Task Forces, DHEC and Health and Human Services Finance Commission (HHSFC) have developed an enhanced obstetrical newborn-infant care package for obstetricians, pediatricians and primary care physicians. An important element of this package is the newborn home visit for selected high risk Medicaid NICU graduates before discharge from the nursery. The infant's and mother's health and the environment are evaluated to assure that the discharged infant's health is not compromised by an unhealthy living situation.

Medicaid Eligibility for Infants: National legislative efforts to amend federal Medicaid regulations to ensure one year's continuous eligibility for infants have been successful. This regulation will, for the first time, ensure that children will maintain the medical benefits for their critical first year of life eliminating the erratic coverage for infants.

Haemophilus Influenza Type B: We are concerned about the number of children admitted to hospitals for Haemophilus Influenza type b infections. In 1989, there were 92, and many of these children were permanently injured. Some died. From 1984-1987, we know of 22 deaths from this bacteria. DHEC has begun providing Haemophilus Influenza type b (Hib) vaccine in infancy using Hib Titer from Lederle-Praxis Biologics. DHEC will be watching the other Hib vaccines that get approved for use in infancy, particularly the dosage schedules and cost.

Health Screenings for Medicaid Children: In 1990, together we performed 71,237 Early Periodic Screenings, Detection and Treatment (EPSDT) screenings, which exceeded the goal of 70,000 screenings set by the Health and Human Services Finance Commission. This is the largest number of screenings that have been done by private as well as public health care providers since the EPSDT program was initiated. DHEC was responsible for 62 percent of the screenings.

Babynet: DHEC's Babynet program will soon enter the fourth year of operation. Babynet is a statewide comprehensive service delivery system to provide early intervention for handicapped and developmentally delayed infants and toddlers. In March 1991, the program will begin case management and assessment services to eligible infants and toddlers. The family service coordinators will be receiving referrals from hospitals, private physicians, and other health providers. All referrals must be accessed and referred into a system that ensures a comprehensive plan of care for the child and deals with the needs of the family.

Substance Abuse in Pregnancy: DHEC is dealing with the problem of substance abuse in pregnancy as a medical not a legal issue, the same approach the SCMA is taking. DHEC, along with the SC Commission on Alcohol and Drug Abuse (SCCADA), other state and private organizations, hospitals and physicians, has instituted a statewide anonymous prevalence survey to determine which drugs are being used by pregnant women and by geographic area where that use is occurring. The results of this survey should be available in October. DHEC is taking the following steps to better manage the problems of substance abuse in pregnancy: staff training to identify signs and symptoms of substance abuse; a referral protocol to SCCADA for levels of intervention for substance using pregnant women; and training in executing effective education for all pregnant women on the impact of substance abuse on fetal development and their own health.

Nursing Shortage: Like other healthcare providers throughout the state, DHEC has not escaped the effects of the nursing shortage. Home health was particularly affected because hospitals and other home health providers are competing for the same pool of nurses with high tech skills. The nursing shortage is having a significant impact in some of our districts which are having difficulty in implementing new health care initiatives, in meeting the most basic health department mandates in some areas, and in staff morale as a result of chronic understaffing. Health departments are looking at ways to maximize nursing resources.

Tuberculosis and the Elderly: We have recognized a growing problem with tuberculosis in South Carolina's elderly population. Every year, about 35 percent of the cases are over 65 years old, and about one-fourth of them are in nursing homes. For the first time in South Carolina, persons entering nursing homes will be required by regulation to have a two-step Mantoux tuberculin skin test. Over the next year, DHEC and the American Lung Association will provide education about tuberculosis and training in tuberculin skin testing to licensed nursing personnel in nursing homes. Our goal is for each nursing care facility to offer the testing of residents upon entry into the facility.

Toxins Health Impact: Physicians need to be aware of the increasing concern their patients may have concerning the health impact of toxins in their environment. DHEC's Division of Health Hazard Evaluation has received over 600 inquiries concerning the health effects of exposures to toxic substances. This division is a technical resource to the medical community as well as the general public concerning the latest toxicological information on toxic substances. If you have questions, contact Dr. Robert Marino, 737-4170.

Primary Health Care: Our redefined Office of Rural Health, Migrant Health and Primary Health Care will be working closely with rural communities to address problems that impede access to health care. Community assessments will identify shortages of health professionals, gaps in and duplication of service delivery and will serve as the agency's coordinating link to facilitate access to federal grant opportunities, such as rural health outreach and rural health transition grants. Physician and nurse recruitment activities will be expanded to include all counties in South Carolina. A major focus of the office will be the development of coalitions with the S.C. Hospital Association, S.C. Medical Association, medical schools and local community organizations to address problems of rural hospitals, lack of uniform emergency medical services, and the lack of providers in rural South Carolina.

Home Care Services: Under the direction of South Carolina physicians, the agency provides home care services to over 30,000 home health and personal care aide patients. These multidisciplinary services enable persons to receive care in their own home, sparing unnecessary institutional costs.

Smoking Prevention: We are also pleased to be working with the SCMA to address smoking prevention and control in South Carolina. DHEC and SCMA are two of the 80 organizations making up the Alliance for a Smoke Free South Carolina. This group represents collective energy and has a real opportunity to make changes in policy, legislation, media messages and community programs promoting non-smoking as the norm.

Breast and Cervical Cancer Prevention and Control Services: DHEC has applied for a cooperative agreement with the Centers for Disease Control to plan and develop a comprehensive breast and cervical cancer control program for low income, minority, and underinsured or uninsured women in South Carolina. Anticipated funding is $2.5 million per year for five years. The services will include public and professional education; breast cancer screening to include physical breast exam and mammogram; cervical screening to include physician pelvic exam and Pap smear. Follow-up services may include diagnostic mammography, colposcopy and/or colposcopy directed biopsy. The agreement will include tracking and surveillance to assure that women at risk are receiving comprehensive services. DHEC plans to contract with private, public and voluntary healthcare providers in communities throughout South Carolina for breast and cervical screening and follow-up services.

State Aid Cancer Clinics: We would like to express our thanks to the SCMA and its member physicians for their support of the State Aid Cancer Clinics. The SCMA was the driving force in establishing the Cancer Control Program in 1939. We are able to serve many patients with fewer dollars only because physicians have been willing to work without pay in the State Aid Cancer Clinics. We really could not continue to operate the program without these volunteer clinicians.

Respectfully submitted,
Michael D. Jarrett, Commissioner

REPORT OF STATE BOARD OF MEDICAL EXAMINERS OF SOUTH CAROLINA

This past year has been a very active and effective year for the board. This report shall present a brief statistical summary and review of the past year.

LICENSURE: In 1990, this board issued 507 permanent licenses to physicians. This compares to 529 such licenses issued in 1989. Of these licenses, 94 were issued by way of the FLEX examination. Four hundred thirteen were issued by endorsement of credentials through the National Board or other State Boards. Of the 507 permanent licenses issued, 23 were issued to graduates of foreign medical schools. By way of comparison, in 1989, graduates of foreign medical schools received 31 permanent licenses. Of the 507 permanent licenses issued, 25 were issued to graduates of doctors of osteopathy.

This board administered the FLEX examination in June and in December. In June, 16 applicants took the exam; 15 passed and one failed. In December, a total of 14 took the exam; 13 passed and one passed Component I, but failed Component II.

The SPEX (Special Purpose Examination) was administered in March, June, September and December, 1990. The results were as follows: March exam = six took the exam, three passed and three failed; June exam = 10 took the exam, seven passed and three failed; September exam = 13 took the exam, nine passed and four failed; and December exam = seven took the exam, five passed and two failed.

Limited Licenses are for residency training or other supervised practice environments approved by the board. A Limited License is for a one-year period (July 1-June 30) or a part thereof. A total of 343 Limited Licenses were issued in 1990. Limited Licenses were issued to 291 United States/Canadian graduates; 52 Limited Licenses were issued to graduates of foreign medical schools.

Six new physician assistants were certified by the board in the past year. There are 62 physician assistants certified in South Carolina.

The medical directory of physicians licensed in South Carolina was again printed in 1990. In the 1990-91 directory there were 5767 physicians listed residing in-state, and 1712 licensed in South Carolina, but residing out-of-state.

INVESTIGATORY AND DISCIPLINARY ACTIVITIES: In 1990, the board received 178 complaints. This compares to 170 received in 1989. Fifty-one sanctions were levied by the board in 1990. These resulted in three revocations; four voluntary surrenders; six suspensions; 11 indefinite periods of probation; one public reprimand and 26 agreements with conditions. In 1990, 98 complaints were dismissed for lack of evidence of a violation of the Medical Practice Act.

LEGISLATIVE CHANGES: In 1990, the Legislature approved changes in the board's regulation governing physician assistants. The board was granted authority to issue a limited certificate to a physician assistant if certain conditions are met.

BOARD MEMBERSHIP: In 1990, the governor appointed Mrs. Elizabeth S. Christensen of Aiken as the board's new lay member. Mrs. Christensen's term commenced on January 1, 1991.

Current officers and members of the board are: J. Ernest Lathem, M.D. (re-elected as president 2/91); Stephen I. Schabel, M.D. (elected as vice-president 2/91); James C. Holler, Jr., M.D. (reelected as secretary 2/91);

R. Patten Watson, M.D.; Vernon E. Merchant, Jr., M.D.; C. Dayton Riddle, Jr., M.D.; James S. Garner, Jr., M.D.; James R. Edinger, D.O.; Roy J. Ellison, Jr., M.D.; and Mrs. Elizabeth S. Christensen.

Current members of the Medical Disciplinary Commission are: Alan W. Fogle, M.D.; Charles J. Owens, M.D.; John A. Ouzts, III, M.D.; Bryan L. Walker, M.D.; Boyce M. Lawton, Jr., M.D.; C. Alden Sweatman, Jr., M.D.; James M. Rainey, M.D.; Martin H. Zwerling, M.D.; Frederick G. Douglas, M.D.; W. Wallace Fridy, Jr., M.D.; Donald G. Gregg, M.D.; Jack A. Evans, Jr., M.D.; James L. Maynard, M.D.; Ronald P. Hargrave, M.D.; Robert E. Lee, M.D.; Daniel M. Ervin, M.D.; and Joseph W. Dunlap, M.D.

Respectfully submitted,
Stephen S. Seeling, Executive Director

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Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

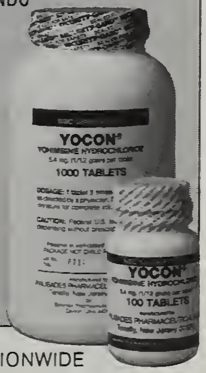
Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:
1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

Rev. 1/85



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RESOLUTIONS

SUBMITTED BY: *Medical Aspects of Sports Committee*

SUBJECT: **SUPPORT FOR SCHOOL NURSES**

WHEREAS, Registered school nurses are integral professionals in the school system contributing to the process of education by identifying and referring to appropriate health providers, students whose health hazards have a direct influence upon their educational achievements; and

WHEREAS, School nurses with their experience and knowledge of growth and behavioral patterns of children are in a unique position in the school setting to assist children in acquiring knowledge and developing attitudes in values conducive to healthful living, and in meeting the children's needs resulting from disease, accidents, congenital defects or psychological or social maladjustments; therefore, be it

RESOLVED; That the South Carolina Medical Association recommend the continued support of school nurses by DHEC and the State Board of Education.

SUBMITTED BY: *Medical Aspects of Sports Committee*

SUBJECT: **HEALTH CARE CURRICULUM IN SOUTH CAROLINA**

WHEREAS, The SCMA has a strong commitment to health education in the state of South Carolina and to all persons entering health related fields; and

WHEREAS, The SCMA membership has always been available as a medical resource to school science educators; therefore, be

RESOLVED; That the SCMA reaffirm its support of the Comprehensive Health Care Curriculum in South Carolina and recommend that a representative from each county medical society serve on the Advisory Committee as one of the two medical representatives mandated by the Comprehensive Health Education Act of 1988.

SUBMITTED BY: *Medical Aspects of Sports Committee*

SUBJECT: **PHYSICAL EDUCATION IN SCHOOLS**

WHEREAS, The SCMA believes that lifestyle modifications play a key role in preventing risk factors for life-threatening diseases: and

WHEREAS, The SCMA believes that an early introduction to exercise by lifetime sport encourages healthy habits and a fit lifestyle; and

WHEREAS, The SCMA believes that, although extracurricular and community sports are valuable, their emphasis is on skill sports and are not sufficient to provide all children an equal exposure to fitness and recreation sport; therefore, be

RESOLVED; That the SCMA recommends that physical education be encouraged from kindergarten through twelfth grade and every child be afforded a minimum number of hours at the primary, middle and upper school levels and be given the option of additional hours of physical education with credit.

SUBMITTED BY: *Charleston County Medical Society*

SUBJECT: **THE ENDORSEMENT OF CONTROLLED DRUG PRESCRIPTION WRITING TO ENSURE ADEQUATE PATIENT PROTECTION**

WHEREAS, The intentions of every physician are to provide safe and fair prescription service to his/her patients with respect to the patient's rights and confidentiality; and

WHEREAS, There is little protection from patients who desire to abuse medications from obtaining controlled prescriptions from multiple physicians without the awareness of the physicians involved; and

WHEREAS, The pharmacy industry has the computer technology to electronically record every prescription written by the doctor's license number, the patient's social security number, patient's name and signature of the physician; and

WHEREAS, The Department of Health and Environmental Control presently tries to identify those individuals who are abusers of controlled prescriptions; and

WHEREAS, The South Carolina Medical Association believes that some sort of mechanism needs to be developed to assure confidentiality of patient/medical doctor information and yet provide safe prescription practices that seek to identify controlled prescription abusers; and

WHEREAS, The South Carolina Medical Association represents the interests of all South Carolina medical doctors; therefore, be it

RESOLVED; That the South Carolina Medical Association endorse a policy of cooperation between the pharmacy professionals, medical doctors, and Department of Health and Environmental Control to assure that every effort is made to stop multiple controlled drug prescription acquisition; and, therefore, be it further

RESOLVED; That the South Carolina Medical Association begin immediate action to institute some type of program; and, therefore, be it further

RESOLVED; That computerization of the state pharmacies be a top priority to assure uniformity of information and thus uniformity of collection of information; and, therefore, be it further

RESOLVED; That standards be developed jointly by all the above parties to assure no restrictive or too burdensome regulations are developed; and, therefore, be it further

RESOLVED; That pilot programs be developed in various geographical areas in South Carolina as soon as possible to facilitate the goals.

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AMA SPECIAL GUEST: JOHN J. RING, M.D., PRESIDENT-ELECT, AMERICAN MEDICAL ASSOCIATION

John J. Ring, M.D., a family physician from Mundelein, Illinois, was elected President-elect of the American Medical Association in June 1990. He was initially elected to the Board of Trustees in June 1983 and served as its chairman from June 1988 to June 1990.

He was an AMA Commissioner to the Joint Commission on Accreditation of Healthcare Organizations from June 1984 to December 1988, and served as Chairman of the Standards/Survey Procedures Committee. Dr. Ring represents the AMA at the World Medical Association as a member of its Council and as Chairman of its Committee on Medical Ethics.

From 1972 until his election to the board, he served as an alternate delegate and delegate to the AMA House of Delegates, representing the Illinois State Medical Society. He was also Chairman of the AMA Council on Medical Service, Chairman of Work Group 6 of the Health Policy Agenda for the American People, and a member of its Steering Committee.

Dr. Ring was elected a trustee of the Illinois State Medical Society in 1977, and was Chairman of its Committees on Redistricting and Health Planning. He is a Past President of the Lake County Medical Society.

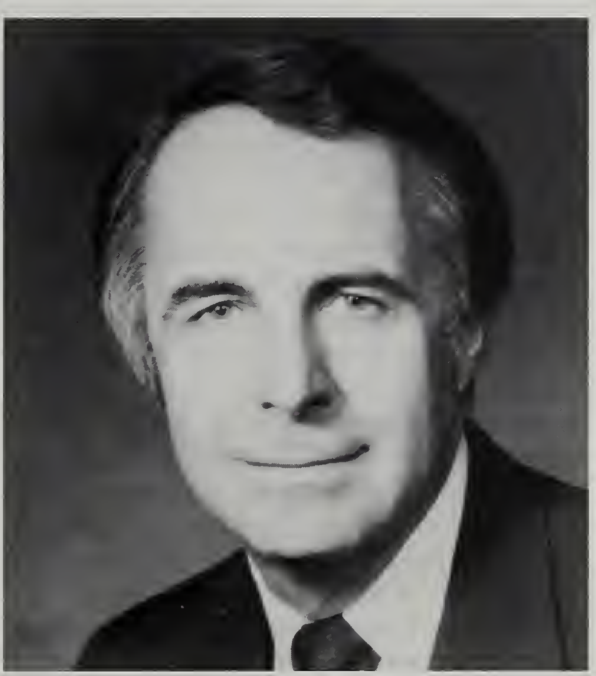
A founding board member, Dr. Ring served from 1975 to 1986 on the Crescent Counties Foundation for Medical Care (Illinois counties of Kane, Lake, DuPage and McHenry). In 1980 he was a founding member of the Lake County Business Medicine Task Force on Health.

Born February 2, 1928, in Washington, D.C., Dr. Ring received his B.S. degree from Georgetown University and in 1953, received his M.D. degree from the University's School of Medicine. From 1953 to 1957, Dr. Ring served in the Medical Corps of the U.S. Navy as a Lieutenant. During that period he interned at the U.S. Naval Hospital in Philadelphia.

Dr. Ring is a Diplomate of the American Board of Family Practice and is on the Attending Staff of Condell Hospital in Libertyville, Illinois, where he serves on the Executive Committee of the Medical Staff.

Dr. Ring and his wife, Anne, reside in Mundelein, and are the parents of four children.

LEONARD DOUGLAS MEMORIAL LECTURE SPEAKER: GERALD L. McMANIS



Gerald L. McManis is president of McManis Associates, Inc., management and research consultants headquartered in Washington, D.C. Since founding the firm in 1964, he has personally directed and participated in hundreds of consulting engagements, working with the CEO's and top executives of leading corporations, healthcare organizations, associations, and the Federal Government. He has directed complex strategic and management analyses for public and private organizations including the White House, the Executive Office of the President, Health Care Financing Administration, Department of Treasury, Environmental Protection Agency, IBM, Citicorp, Coopers & Lybrand, Xerox Corporation, the Mitre Corporation, Hospital Corporation of America, The Equitable Life Assurance Society and Bristol-Myers.

Mr. McManis has extensive experience in developing repositioning strategies for organizations facing turbulent and competitive environments, ranging from assisting small, privately held firms in effectively planning and managing growth, to identifying and implementing international strategies for major corporations. He has particular expertise in strategic planning and management for healthcare provider organizations and health-related corporations, and is recognized as a leading strategist and futurist in the healthcare industry. He is also experienced in governance structure and board relations, healthcare system and strategic linkage development, physician relations and integration, and managed care.

Mr. McManis has worked with several of the leading hospitals and healthcare systems in the country, with physicians and physician groups, and with numerous healthcare associations.

He has lectured widely throughout the U.S. and abroad on healthcare and business issues and trends, and has conducted numerous leadership and management retreats and workshops for executives and boards.

Gerald McManis is on the board and faculty of The Governance Institute and has presented programs at several of its National Leadership Conferences. He has also led leadership round table discussions and presentations for the national conference of the Society for Human Resource Management. He has published numerous articles on strategy, leadership, and management, as well as on healthcare trends and issues, in such journals as *Hospitals, Healthcare Executive, Executive Excellence, Modern Healthcare, Health Care Competition Week, Trustee,* and *HR Management,* and serves on the editorial boards of several healthcare publications.

Before founding McManis Associates, Mr. McManis served as administrative officer of an eastern university and as a Federal executive within the Department of Defense, where he was responsible for application of systems analysis techniques to management problems.

Mr. McManis is listed in *Who's Who in Business and Industry*. He is a graduate of George Washington University and completed the requirements for an M.A. in Management at American University. He pursued his graduate work for a Ph.D. at the University of Pennsylvania as a Fels Scholar.

SOCPAC LUNCHEON SPEAKER
CONGRESSMAN BUTLER DERRICK

Congressman Butler Derrick is in his ninth term in the U.S. House of Representatives and has represented the Third District of South Carolina since 1975.

Congressman Derrick has distinguished himself as a representative who can get things done for his constituents as well as a legislator with a strong voice on many issues of national interest.

As vice chairman of the powerful Rules Committee, he is involved in almost every piece of legislation debated on the floor of the U.S. House of Representatives. The Rules Committee determines which legislation is considered by the U.S. House as well as when and how it will be debated. Considered one of the three most influential committees in the U.S. House, Congressman Derrick has served on the committee since 1979.

His seniority in the U.S. House is also illustrated by his appointment in the current 102nd Congress to the Democratic Steering and Policy Committee, one of only nine appointments made by the Speaker of the House, Thomas Foley. The committee sets party policy and makes committee assignments for the Democrats in the U.S. House.

Instrumental in the fight to save the textile industry, Congressman Derrick leads the efforts in the U.S. House of Representatives to overturn trade laws that give unfair competitive advantages to foreign companies at the expense of American textile companies. He won passage of a requirement that all imported textiles and clothing be labeled to show country of origin. As a result, he has been called the "Made in the USA" congressman.

His many honors include lifetime membership in the Green Berets which is the Special Forces Association's highest civilian award, recipient in the 99th and 101st Congress of the National Federation of Independent Business' "Guardian of Small Business Award," and winner of the first annual 1991 Tourism Achievement Award.

Born September 30, 1936, he is married to Beverly Grantham Derrick, and has four children, Lydia Derrick Wherry, Butler C. Derrick III, Charlotte Grantham and George Grantham.

Editorials

GOOD MEDICINE

My title comes from this year's AMA National Leadership Conference, held February 15-17 in Orlando, Florida. If the meeting had a recurring theme, it was that the horses of organized medicine, government, big business, and consumers now pull more-or-less in harness toward the goal of providing adequate health care to all Americans. Good will abounded.

The conference began with a "town meeting on professional challenges of the nineties" in which Professor Arthur Miller of Harvard Law School probed the opinions of physicians, ethicists, economists, and others on the dilemmas facing our medical care system. The next morning, Senator Jay Rockefeller explored the problem of allocating resources for responsible patient care. It became apparent that government shares with the AMA the premise that all Americans deserve access to quality services. It struck me that all physicians should be familiar with the basic aspects of the AMA's proposal, Health Access America (Table).

My favorite presentation was that of former Supreme Court Chief Justice Warren E. Burger, whose title was: "Law and medicine: finding common professional ground." He pointed out that medicine, like law, is a monopoly, and that early on there arose the idea that monopolies must be regulated. He went on to say that both medicine and law enjoy a great deal of autonomy: licensing is done at the state rather than at the federal level and both professions set their own ethical standards.

The distinguished jurist addressed "a disease of greed, arrogance, and self-promotion" widespread in both medicine and law. He observed that "love of a profession charges persons with the duty to criticize the shortcomings of the profession insofar as that criticism is constructive" and added: "One must constantly be on the alert to make sure that one's profession is just that—and not a trade or a business." Harder on the legal profession than on medicine, he suggested that "lawyers should be healers, not gunslingers."

TABLE

ESSENTIAL COMPONENTS OF THE AMA'S HEALTH ACCESS AMERICA PROPOSAL

1. **STRATEGIES DESIGNED TO INCREASE ACCESS**
    - Major Medicaid reform
    - Requirement for employer provisions of health insurance
    - Creation of state-level risk pools in all states
2. **STRATEGIES DESIGNED TO INCREASE OR MAINTAIN ACCESS AND QUALITY AND TO REDUCE COSTS**
    - Medicare reform
    - Finance expanded long-term care coverage for the elderly
    - Develop professional practice parameters
    - Increase health promotion and disease prevention
    - Amend ERISA or the Federal tax code to equalize treatment of self-insured and insurance plans
    - Repeal or override state-mandated benefit laws
3. **STRATEGIES DESIGNED TO REDUCE COSTS**
    - Professional liability reform
    - Alter the tax treatment of employee health benefits
    - Encourage cost-conscious decisions by patients
    - Seek innovation in insurance underwriting
    - Reduce administrative costs and paperwork
4. **STRATEGIES DESIGNED TO MAINTAIN QUALITY AND ACCESS**
    - Expanded Federal support for medical education, research, the National Institutes of Health
    - Encouragement of physicians to practice in accordance with the highest ethical standards and to provide voluntary care

Then he turned to ethics.

Showing familiarity with medical history, Burger noted that a code of ethics was established by the AMA in 1847 at its very first meeting. However, he also noted that neither the AMA nor the American Bar Association disciplines their members with any regularity or consistency for breach of ethical standards. He issued a strong opinion: "In a profession, one must go higher than the law requires one to go." For example, today's law allows both doctors and lawyers to advertise. However, advertising by a professional reminded him of the ditty, "Come into my web said the spider to the fly." He closed with some personal advice for consumers: "Never engage the services of a doctor or a lawyer who finds it necessary to advertise in order to obtain patients or clients." Justice Burger received a standing ovation.

Next, Dr. Louis J. Sullivan, Secretary of the U. S. Department of Health and Human Services, spoke on the problem of "living up to the social contract." Quoting Pasteur that "chance favors the prepared mind," he explained that professional responsibility requires four roles:

- *Lifelong learners*: We must question our facts and assumptions on a regular basis. He cited Einstein: "Whoever sets himself up as a judge of truth and knowledge is shipwrecked by the laughter of the gods."

- *Good communicators*: We must broaden our interpersonal skills, especially our ability to listen. We must listen to each other, to the public, and—most especially—to our patients.

- *Good managers*: We must find ways to stretch the healthcare dollar. When it is working well, ours is the best healthcare system in the world. However, we have problems: health care consumes over 11% of our gross national product, yet more than millions of Americans lack health insurance. "A Federalized system is not the answer to cost, access, and quality. . . . The challenge is to make the system available to all through an array of insurance initiatives."

- *Good promoters*: We must promote healthy lifestyles at every turn. We must seek to eliminate the use of alcohol and tobacco. And we must try to reduce the frequency of high risk sex and other social behaviors.

Of the breakout sessions, I enjoyed one entitled: "Selecting and educating ethical physicians: a new Hippocratic Oath?" Dr. Stephen Beering, an internist/endocrinologist who is now president of Purdue University, began with the reflections of the Roman emperor and Stoic philosopher, Marcus Aurelius, who taught among other things that one should "live as though on a mountain." After reviewing most of the current issues of ethics in medicine, Dr. Beering closed by quoting another philosopher, Immanuel Kant. Late in life, Kant was asked to what he attributed his enormous success. He replied: "The secret of success is to ask, 'What should I know? What can I do? For what can I hope?' "

Dr. Beering had the following advice for today's physicians:

- *What should I know?* "To ask incisive questions."

- *What can I do?* "Live as on a mountain."

- *For what can I hope?* "The opportunity to lead in the service of mankind."

The final day opened with a presentation by Senator Orrin Hatch on "professionalism and professional liability reform." A Utah attorney experienced in the area of medical negligence, he feels strongly that solutions to the professional liability issue must be initiated at the Federal level and that Federal statutes should pre-empt state ones. Acknowledging that his bill seems optimistic, Hatch was quick to define one difference between optimists and pessimists: "In the end, pessimists may be proved right but optimists have a better time on the trip." The closing session returned to the central issue of "access and the equity of health system reform."

Senator James Jeffords pointed out that if the United States healthcare system were to be ranked as a separate economy, it would be the sixth largest economy in the world, between Canada and Italy. Yet we have some 37 million uninsured or underinsured citizens; only about 41% of the poor are covered by Medicaid; and some 20% of self-employed workers lack insurance for themselves. Jeffords proposed *Medicore*, a system of national health insurance financed by both Federal and state insurance with private insurance carriers playing a pivotal role.

Lane Kirkland, a South Carolina native who is president of the AFL-CIO, argued that "the healthcare crisis is sapping America's economic vitality and its living standards." Medical expenses eat up 31% of the average family's disposable income and 25% of the average company's profits. Three-fourths of striking workers cite healthcare costs as a major issue. Kirkland then outlined the AFL-CIO proposal for containing costs which, he pointed out, contains many similarities with the AMA's Health Access America proposal.

Dr. James S. Todd, the Executive Vice President of the AMA, closed the conference by pointing out, among other things, that an important aspect of professionalism is *accountability*. He urged: "We must be accountable to social imperatives." He also underscored the AMA's increasing emphasis on stringent ethical standards. He closed on a note of optimism that many elements of our society seem to be coming closer and closer together on the issues.

One of Dr. Todd's remarks struck home: "Physicians have a unique tendency to reject leadership and to expect miracles." How true this seems of those who abstain from any form of participation in organized medicine! As we prepare for our 143rd annual meeting, let us remember that it is through organized medicine that we can best influence our collective destiny. At any level, such participation is . . . well, *good medicine.*

—CSB

THE SCMA ENVIRONMENTAL COMMITTEE IS OFF AND RUNNING

Great enthusiasm for the decade of the 90s came in with its first day. "The decade of the environment," many hopefully call it, and so may it be. The AMA has recently begun to encourage us to become involved in the environmental movement. Thus last fall was born this committee, its first meeting signaling a 100% attendance, a green sign. Its role and purpose had an incomplicated delivery that night. Here it is:

1. Provide the means to educate physicians, patients and government regarding environmental concerns.
2. Provide a forum for the evaluation of the environmental hazards or potential hazards to the public health.
3. Actively pursue the environmental goals of the SCMA using all means at our disposal.

Now, why was such a committee needed? The AMA strongly encouraged us to be stewards of the environment, especially in our practice and in teaching at all levels. I was happily surprised to see in "The Report on the Survey on Environmental Issues in South Carolina," conducted by the University of South Carolina with DHEC's support in July 1990, that the public considered the most credible source of information on environmental issues to be the opinions of doctors and nurses. In the many environmental meetings which I have attended I am often asked what stand does the medical profession take on this issue, and as a rule, I have had to say that we haven't taken a stand. Thus, a heavy responsibility is thrust on our shoulders whether or not we know it, like it, or deserve it. However, it is a fine compliment to the integrity of the medical profession and we will live up to it.

Since retiring several years ago, except for enjoying surgical missions in Central America, the environment has assumed a high priority in my time schedule. My wife, Mary, saw before I did the significance it had to the future of our grandchildren's lives and what damage our civilization had done, and is doing, to life on this earth and to our pristine planet. The gentle sex has a gentler outlook on life and the environment than men and we need to listen to them.

We must realize that the earth is being severely damaged by us and that we need to treat this great gem with awe, respect and appreciation. We need to be its stewards and not its lord and master.

Scientific and religious communities in the past have often been in conflict, but on the environment they seem to be closing ranks. In January 1990 a world conference on the environment held in Moscow brought together 50 world scientists and 270 spiritual leaders from all lands. The scientists stated, led by Carl Sagan:

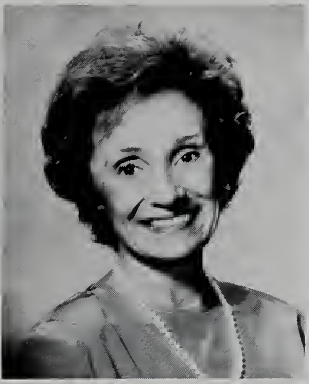
> "Problems of such magnitude, and solutions demanding so broad a perspective must be recognized from the outset as having a religious as well as a scientific dimension. Mindful of our common responsibility, we scientists—many of us long engaged in combating the environmental crisis—urgently appeal to the world religious community to commit, in word and deed, and as boldly as required, to preserve the environment of the earth.
>
> "As scientists, many of us have had profound experiences of awe and reverence before the universe. We understand that what is regarded as sacred is more likely to be treated with care and respect."

The religious leaders' response was, in part: "We believe the environmental crisis is intrinsically religious. All faith traditions and teachings firmly instruct us to revere and care for the natural world. . . A religious response is essential to revere such long-standing patterns of neglect and exploitation."

What are some of the problems we face in South Carolina? Prominent is the Pinewood toxic waste site on the shores of Lake Marion, which lies over an aquafier and endangers our waters. At the Savannah River Plant there is massive storage of radioactive waste and an unacceptable number of dangers in its structure, policing and administration. Massive out-of-state wastes pour into our state and pollute the soil, water, air and life, including our own. Our wetlands are threatened and two bills in the House are considering this subject which impacts on our water, wildlife, the state's beauty, and our healthy recreation. Air pollution from oil and coal burning and from chemical plants is extensive. Pesticides and fertilizer in agriculture are threats. All need our attention. Then, to achieve healthy changes, we must exert our great weight in the public mind through our own professional avenues, such as our offices, local medical societies, speaking, and most important, through the political system.

This committee will have a corner in the blue pages of our journal. We thought that we should start in our own offices with suggestions on how to make our working areas safer and better. Because some personnel might need reasons for our recommendations, simple explanations will be given. This corner starts in this issue. Please have your office personnel read these suggestions.

Edmund R. Taylor, M.D.
1701 St. Julian Place
Columbia, SC 29204



Mrs. Lewis N. Terry
President

Auxiliary Page

PRESIDENT'S MESSAGE

The South Carolina Medical Association Auxiliary had an outstanding and productive 1990-1991. Our 27 organized counties have given an impressive amount of energy, commitment and service to their communities as well as support to the medical families. Most of the efforts have been directed towards improving the health of their citizens.

The Health Education Van continues to be an important education resource for the children in our state. This year at our Annual Meeting we will give financial grants to assist some counties to work with the van. These monies were raised through the sale of the cookbook, *Betsy's Best*. We are working with ETV at the South Carolina Education Department to develop a teaching video utilizing the van. The van was featured in the book, *Power to Heal*, and is to be in an upcoming issue of *Sandlapper*. It was also in "Patchwork," a health education resource book for South Carolina.

A pilot health project, "Prescription Checkup—It's in the Bag," was implemented in Sumter-Clarendon-Lee. Patients fill the bags with all the medications they are currently using and when they visit their physician they are available for his inspection.

Several counties have been working with their societies to implement the AMA-ABA substance abuse education program. In addition, health fairs, health screening, breast cancer awareness, Reach to Recovery, child restraint, Ronald McDonald House, free medical clinics, health education programs and seminars, therapeutic clowning, pediatric parties, senior citizen programs, nursing scholarships, Medical Explorers and child abuse projects are only some of the ways our auxilians have given back to their communities and supported the work of our physicians. The work the auxiliaries do is truly commendable and it is easy to see why the auxiliary is one of the nation's leading volunteer organizations.

Over $26,000 (surpassing money raised last year) has been raised for AMA-ERF this year. The holiday sharing cards continue to be the primary way these dollars are raised. AMA-ERF all purpose cards were used to honor doctors on Doctor's Day.

Our Legislation Chairman encouraged 100% voter registration by auxilians and physicians and then encouraged them to use their power to vote. We have urged membership in SOCPAC as well.

Our Membership Committee has strived to stress to the spouses of SCMA members the importance of belonging to auxiliary this year. Recruiting new members and retention of our members is vital to our organization. Counties have been asked to submit all their "innovative ideas and successful efforts" so that they can be shared around the state.

Correspondence from the Physician Family Support Committee, the Corresponding Secretary and the President has been sent to all the families of physicians who have been called to active duty to offer assistance and support. In addition, the spouses have been invited to attend our Annual Meeting as our guests. Our past presidents have received a birthday card which also served to keep them informed about our auxiliary.

President George Bush signed a proclamation establishing March 30 as "National Doctor's Day." Governor Carroll Campbell issued a state proclamation in honor of Doctor's Day in South Carolina. It is a well-deserved observance of the dedicated service given by physicians.

The SCMA Auxiliary is grateful for the support given by the SCMA. Deep appreciation to Dr. John Simmons and the Board of Trustees for their guidance during this exciting and successful year. Julia Brennan's able assistance has been immensely helpful in attending to the affairs of the auxiliary.

MRS. LEWIS N. TERRY, JR. (BETSY)
President

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The Journal
OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

VOLUME 87 MAY 1991 NUMBER 5

NASAL ENDOSCOPY: AN ADVANCEMENT IN DIAGNOSIS AND TREATMENT OF SINUSITIS

STEPHEN A. IMBEAU, M.D.*
JAY L. LUCAS, M.D.
SANDRA MEYER, R.N.

There has been a quiet revolution in medical thought concerning the diagnosis and treatment of chronic sinus disease. The new viewpoint began in Europe and has slowly spread to the United States, but is still viewed with some skepticism here. But careful diagnostic work with nasal endoscopes and computer-assisted tomography has begun to change the traditional American thinking about the cause and effect of nasal and sinus disease.

The new thinking was well summarized by Stammberger in 1985.[1] In particular, he stated the following observations: "(1) Most infections of the paranasal sinuses are rhinogenic, spreading from the nose into the sinuses. (2) If a sinusitis does not heal or is recurring, a focus of reinfection is usually a stenotic area that feeds ongoing infection or from which the dependent sinuses are reinfected. This is also true for primarily dentogenic, traumatic, blood-borne sinusitis, which recurs after the primary source infection has been cured. (3) The narrow or stenotic areas involved are the ethmoid infundibulum at the entrance to the maxillary sinuses and the frontal recess at the entrance to the frontal sinuses. They build up a system of fissures and clefts in the middle nasal meatus, all of which are parts of the anterior ethmoid. Thus the frontal and the maxillary sinuses are dependent on the anterior ethmoid. They are ventilated and their mucus is drained into the middle nasal meatus via the anterior ethmoid; the physiologic as well as pathologic conditions are dependent upon the conditions there."

Basically, this research has concluded that drainage out of the maxillary and frontal sinuses is not by gravity but by cilia pathways through the ethmoid infundibulum (the anterior ethmoid serve as windows/doors to the other sinuses). Therefore, obstructions of the anterior ethmoid and the so-called osteal complexes or middle meatal complexes will cause secondary sinus disease. The obvious implication is that surgical treatment of chronic sinusitis has to be at the area of the anterior ethmoid and the osteomeatal complexes rather than the maxillary antra.

If these theories are correct, a new surgical technique is born, and is made possible by the nasal endoscope. If done carefully, it has less morbidity than the standard procedures and also preserves mucous membrane. If mucous membrane can be maintained intact after obstructions are removed, then the maxillary and frontal sinuses might drain normally again. This should be superior to the standard Caldwell-Luc procedure which usually removes the mucous membranes of the maxillary sinus.

For a pictorial review of these issues,

---

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please see the accompanying photographs taken from an article by Zinreich et al (Figures 1A, 1B, 1C).[2]

We have been impressed with the versatility and convenience of endoscopic diagnostic examination of the nose and sinuses and also endoscopic surgery. Therefore, we have decided to review our experience over the last two years with these techniques in hopes of promoting their use in our state. We believe that they represent an improvement in diagnosis and therapy of sinus disease, while reducing morbidity and cost to patients.

METHODS

We followed the guidelines for patient selection and for procedure performance described in the literature.[3] Specifically we selected patients for endoscopy with nasal polyps on anterior exam, malformations, foreign bodies, or where tumors were suspected. We endoscoped patients who failed to respond to medical therapy for allergic rhinitis after six months. We also scoped all patients who failed to clear a sinus infection after three weeks of medical therapy with steroids and antibiotics. Finally, we scoped patients who had otherwise unexplained rhinitis on clinical evaluation (about 20%).

We performed our endoscopy with a Wolff 2.7 mm. 30° angulated rigid scope. We used Otrivin solution and Pontocaine local anesthetic in preparation. The endoscope was first slid under the inferior turbinate to the hypopharynx and withdrawn with careful visualization in both directions. Next the scope was placed alongside the middle turbinate, pressed forward and then withdrawn for visualization along both directions. The endoscope was placed again along the middle turbinate and rolled carefully under the turbinate to inspect the osteomeatal complex and ostea if available as it was withdrawn. We also advanced the scope toward the superior turbinate area. As a matter of course, we referred patients for computer scanning of the sinuses (using 3 mm. coronal cuts through the sinuses without contrast) if we found endoscopic abnormalities which we believed would require or would respond to surgical intervention. Even patients with negative endoscopic exams were referred for computer scanning if their symptoms persisted for a month despite the best of our clinical efforts. On occasion, significant septal deviation or polyposis prevented good examination; these patients, too, were sent for computer evaluation. As you can see from the Results section, some of these negative endoscopic exams did in fact result in positive computer x-ray findings. All patients with computer x-ray abnormalities which were thought to be amenable to surgical correction were referred to an ENT surgeon (JLL) well experienced in endoscopic paranasal and sinus surgery. Surgery was performed only on his advice and with the compliance of the patient.

SURGICAL TECHNIQUE

The patient was first placed under oral tracheal anesthesia and the nose vasoconstricted with 0.5% Neo-Synephrine pledgets followed by infiltration with 1% Xylocaine with 1:100,000 Adrenaline. If a septoplasty was planned, the septal mucosa was also infiltrated.

The nose was inspected with the straight-on rigid endoscope and the middle meatus observed for anatomic obstruction, polypoid tissue, or purulence. If the middle turbinate was large or contained a concha bullosa, the lower one-quarter of the turbinate was amputated with nasal scissors. The uncinate process was removed with the up-biting Blakesley forceps followed by removal of the ethmoid bulla. The anterior ethmoid cells were removed in a piecemeal fashion with up-biting and straight Blakesley forceps. After cleaning out the anterior ethmoid sinus, the frontal recess was inspected with a 25° or 70° scope. If the frontal recess was involved with polypoid tissue, it was debrided with the up-biting Blakesley forceps. If the mucosa of the posterior ethmoids appeared abnormal on the CT scan, the basal lamella was penetrated with a straight suction tip and the posterior ethmoids were marsupialized. Care was taken not to penetrate the medial orbital wall. The ethmoid sinus was located at the posterior end of the middle turbinate and was entered with a straight suction top when disease was present on the CT scan. The anterior wall of

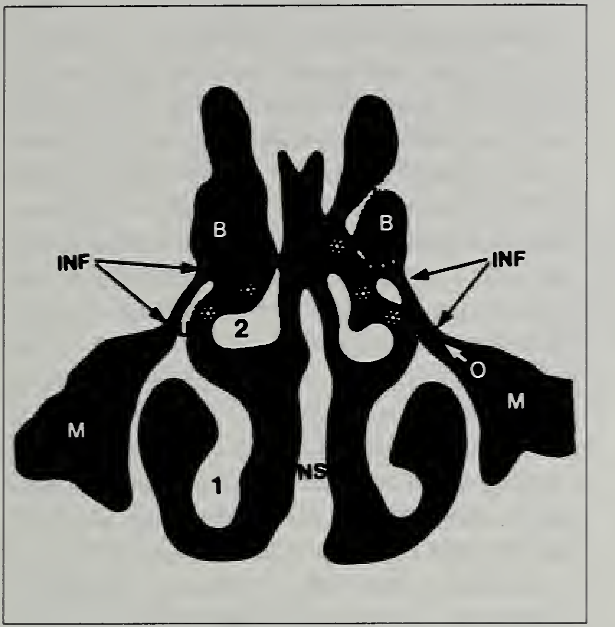

FIGURE 1A

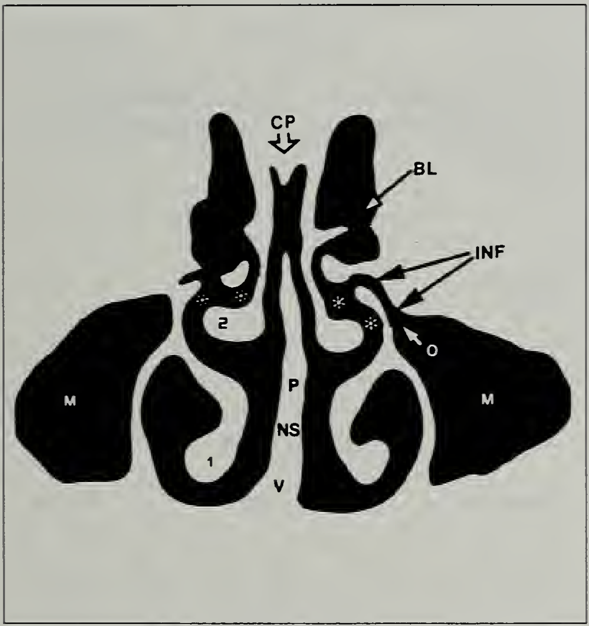

FIGURE 1B

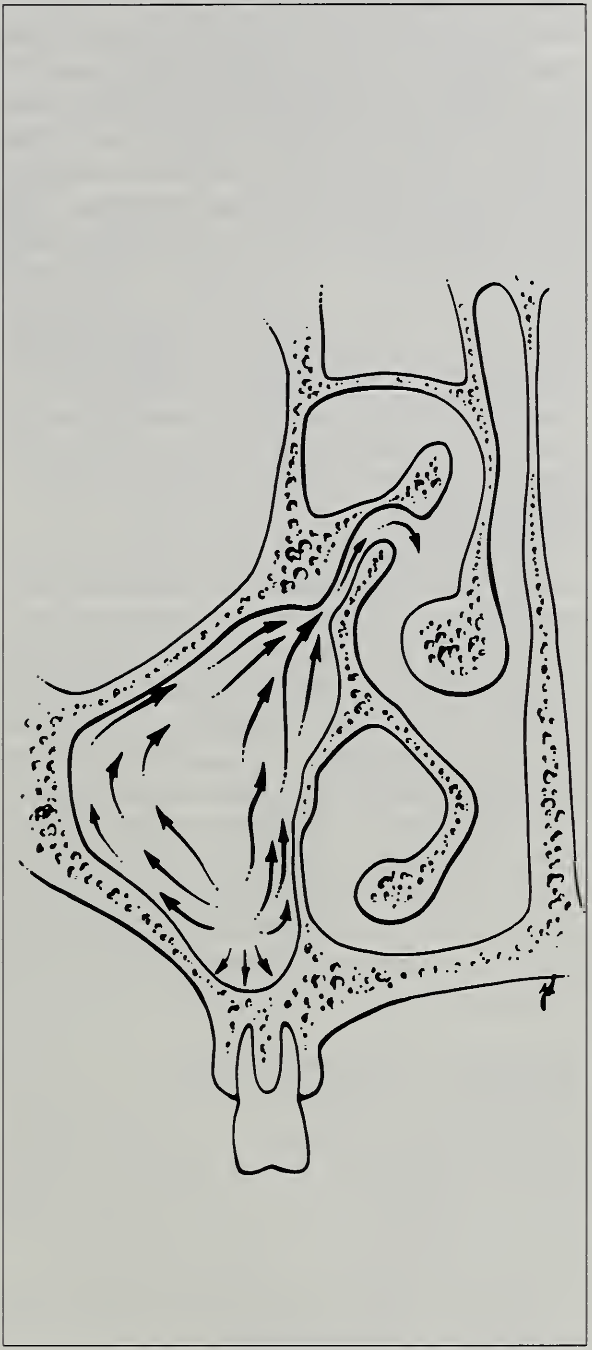

FIGURE 1C

FIGURE 1. Normal anatomy of osteomeatal unit as seen on CT. (A) The infundibulum (*INF*) is delimited inferiorly by the maxillary sinus ostium (*O*), medially by the uncinate process (*U*), superiorly by the ethmoidal bulla (*B*), and laterally by the inferomedial orbit. The air space surrounding the ethmoidal bulla inferoposteriorly is the hiatus semilunaris (small arrows). (B) The middle turbinate (*2*) has dual attachments: a high vertical one to the cribriform plate (*CP*) and a horizontal one to the lamina papyracea, the basal lamella (*BL*). The air-containing space between the uncinate process (*U*) and the middle turbinate is the middle meatus (*). *NS* = nasal septum, *P* = perpendicular plate, *V* = vomer, *M* = maxillary sinus, *I* = inferior turbinate. (C) Mucociliary clearance from the maxillary sinus. The mucus film is propagated from the antral floor up along the walls of the sinus toward the main maxillary sinus ostium, through the infundibulum into the middle meatus (osteomeatal unit).

(used by permission)

the sphenoid was removed with sphenoid Ronguers, taking care to stay away from the lateral superior wall of the sinus in order to avoid injury to the optic nerve or the internal carotid artery. Finally, an antrotomy was made in the middle meatus with a curved suction tip at the tip of the middle turbinate. The antrotomy was enlarged with back-biting Ronguers, being careful to stay away from the nasal lacrimal area. Through this antrotomy, using the 70° scope, the sinuses could be visualized and antral polyps removed with a curved forceps. If necessary, a second antrotomy was made in the inferior meatus, providing additional site for visualization and instrumentation.

After completion of the surgery, the nose was irrigated and packed with antibiotic ointment in the ethmoid region. Merocel packs were placed along the floor of the nose to collect drainage. In general, the packs were removed on the first post-operative day and the patient discharged. Post-operative care was extremely crucial to prevent synechia formation and promote adequate healing. The patient was placed on saline nasal irrigations and topical steroids and was seen weekly in the office for careful debridement, suctioning, and lysis of intranasal synechia. The healing process is usually six to eight weeks.

RESULTS AND DISCUSSION

We did retrospective review of all patients undergoing nasal endoscopy in the clinic over an eight month period. Fifty-nine patients were sent for computer x-rays of the sinuses and 29 patients agreed to have surgery out of the 55 that were thought to be surgical candidates.

Table I shows the analysis of the endoscopic and computer findings.

Note that there were very few false positive endoscopic exams, although there were several false negative exams. We therefore recommend that if patients continue to have symptoms despite negative endoscopic examination, they should also have a computer study. The good correlation between endoscopic and computer x-ray also supports the use of the endoscope as a diagnostic screening tool by the nonsurgical practitioner. The endoscope as a screening tool rather than the computer x-ray saved a total of $16,700 to our study population (384 patients screened).

Our surgical results are also very encouraging. See Table II. We report a 77% success rate after one year of follow-up, which is very good although not quite as high as the figure of 85% in one report.[4] It is interesting to note, however, that of the five patients who apparently did not improve, two of them had a temporary improvement with relapse and two of them had recurrence of nasal polyps. Nasal polyps, of course, do recur and this cannot be really faulted to a problem with the surgical technique. The literature does report that scarring can occur to re-occlude the ethmoid and meatal complexes in the area lateral to the middle meatus.[5] Therefore, relapse of symptoms after surgery could mandate a careful endoscopic examination at the hands of the surgeon to see if remedial work can still be done.

TABLE I

	Positive Endoscopy	Negative Endoscopy
Positive CT	49	6
Negative CT	2	1

TABLE II

Improved	Same	Worse
22	5	0

Follow up condition one year after surgery
(2 patients lost to follow-up)

We are now believers in the new theories concerning nasal sinus disease. We concur that it is indeed obstruction of the anterior ethmoid cells that leads to secondary maxillary and frontal sinus disease. We have seen the variety of cases described in the literature. We have seen lesions caused by bony obstruction and lesions caused by soft tissue obstruction (whether related to viral infection, chronic or seasonal allergy, or nasal polyps). All of these patients have been helped by endoscopic surgery, although the patients with allergy, of course, required continued aggressive classical allergy injection therapy.

Most of the writers promoting endoscopic nasal surgery in the medical literature encourage a careful approach for physicians who wish to learn the new techniques and who are used to the older techniques. In particular, most writers recommend developing skills on a cadaver as a first step. They then recommend taking the endoscope into surgery as an assistant working with a surgeon doing a standard procedure so as to familiarize themselves with the anatomy and the relationships. As a third step, they then recommend a careful endoscopic surgery. A major recommendation running through many of the surgical papers is to keep the light source at a distance so as not to distort visual relationships and landmarks.

The non-surgical practitioner will find the diagnostic endoscope to be a valuable adjunct to nasal/sinus evaluation (we recommend postgraduate training in the endoscope's proper use). Lesions not seen with anterior rhinoscopy become readily available and many of them are amenable to surgical correction or removal. Specific diagnosis can be made and the patient more properly treated. The end result is a satisfied patient and a satisfied physician with the knowledge of a job well done. ☐

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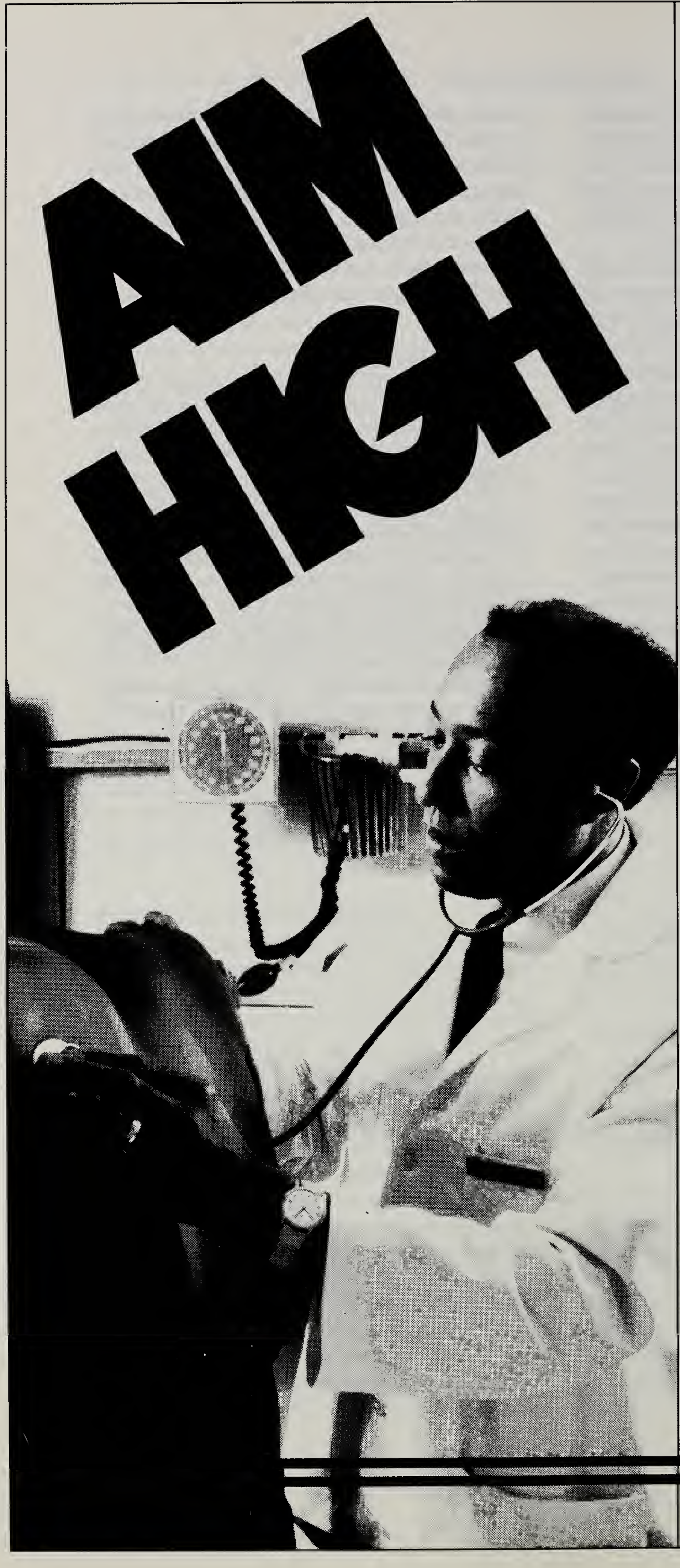

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LAPAROSCOPIC CHOLECYSTECTOMY: THE FIRST SIX MONTHS

NORMAN S. WALSH, M.D.*

In the December, 1990 issue of *The Journal of the SCMA,* Adams and Greene[1] published a comprehensive history of the development of cholecystectomy and the evolution to laparoscopic cholecystectomy. They presented results of the procedure done in other states and gave an excellent discussion of the present and future status of this procedure. Readers interested in more general information can refer to the article and references by Adams and Greene. Presented here is a personal series of 50 consecutive cases done in the six-month period beginning May 1, 1990. The surgical technique used in these cases is similar to that which is taught at courses around the country.

RESULTS

Laparoscopic cholecystectomy was attempted in all patients who presented for cholecystectomy whether elective or emergency. Of the total of 55 patients, five required conversion to open cholecystectomy. Three of these had acute cholecystitis. One had extensive adhesions around the cystic duct area secondary to previous gastric surgery. The fifth patient was converted because the omentum was inflated with C0-2 preventing entry with the trochar. This problem is part of the learning curve and should be a one-time occurrence.

DISCUSSION

The low incidence of complications was gratifying. The one patient re-admitted with nausea was found on ERCP to have spasm of the sphincter of Oddi and responded to sphincterotomy. The patient admitted more than 30 days postoperative had abdominal pain immediately after surgery. A CT scan was normal. She was admitted to another hospital during her sixth post operative week and a CT scan showed an 8 cm. cyst in the left lobe of the liver. It was completely resolved by CT directed needle aspiration. It contained non-infected bile. No relationship between this cyst and her surgery has been established.

TABLE 1

Average length of stay	1.1 days
Discharged after 1 night	70%
Discharged after 2 nights	84%
Discharged same day	16%
Shortest operating time	45 Minutes (3 cases)
Longest operating time	180 Minutes (1 case)
Average operating time	86 minutes
Average for patients over 200 pounds	105 minutes
Incidence of non-calculous cholecystitis	20%
Average amount of analgesic	Demerol 140 mg and Codeine 45 mg.
Oldest	89 Years
Youngest	18 Years

TABLE 2
Complications

Intraoperative	None
Re-operation	None
Respiration, urinary, wound infection, bile or fluid collection	None
Re-admitted within 30 days	One
Re-admitted after 30 days	One

It is interesting to note that patients over 200 pounds required 20 minutes more O.R. time. Obese patients may require more time in getting adequate insufflation, abdominal wall penetration and exposure. In several of these patients, the hepatic flexure of the colon and the greater omentum prevented adequate visualization of the cystic duct area. Rotating the operating table didn't help and a fifth trochar was inserted. An instrument was then used to hold the colon down. In several of the obese patients it was felt that laparoscopic cholecystectomy was easier than open laparotomy. One of the patients done in 45 minutes weighed 234 pounds.

Two patients had an elevated bilirubin pre-operatively. Pre-operative ERCP was done in each case and was normal. Cholangiograms were done in 10 percent of patients

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and were normal. When appropriate, patients suspected pre-operatively of having common bile duct stones should have an ERCP and if indicated, sphincterotomy. Common bile duct exploration by laparoscopy is not yet within the capability of most surgeons and hospitals.

The 20 percent incidence of non-calculus cholecystitis in this group is much higher than the previously recognized incidence of about five percent. All of these patients had pathological confirmation of chronic cholecystitis and all were relieved of pain. Most of us see patients with typical symptoms of gall bladder disease when all tests are normal. In each case, there is the concern about operating and removing a normal gall bladder. More of these patients are willing to risk surgery now that there is something better than open cholecystectomy. I expect that there will be a rise nationally in the incidence of surgery for non-calculus cholecystitis.

Adams and Greene[1] asked the question of who will eventually benefit fram laparoscopic cholecystectomy and state that the answers are not readily available. Based on my experience, the benefits of this operation have not been exaggerated. It should not be long before the answers are available in reports of hundreds of cases. The relative absence of pain and early return to normal activity is the usual. Some patients have driven themselves to the office on their second post-operative day. Shortening the disability period by as much as 30 days benefits patients, their families, employers, and insurance companies. In the beginning, insurance companies denied payment, saying it was an experimental procedure. Within six months, if a patient didn't go home on the day after surgery, the same companies wanted to know why. I see no logic in the suggestion that this procedure might have long term complications different from those that might occur with open cholecystectomy. Mortality from laparoscopic cholecystectomy should be lower than for open surgery. However, it might actually be higher because this procedure can be offered to some patients who are at too high a risk to have open laparotamy. One patient in this group was an 85-year-old man with COPD. He came to the office in a wheelchair with an oxygen tank attached and O_2 flowing into a nasal cannula. He said his pain was so bad he couldn't stand it but that when he took narcotics it depressed his breathing. He had been told that he could not tolerate cholecystectomy. He said he would rather die than keep hurting. Laparoscopic removal of his gall bladder was successfully done. Post-operatively he was placed in the intensive care unit on a respirator. He was off of the respirator four hours after surgery and had a regular diet for supper. His only post-op pain medication was a one-time dose of 25 mg. of Demerol. On the morning following surgery he was discharged from the intensive care unit directly to his home.

A surgeon's ability to properly perform this procedure is directly proportional to the time and diligence in hands-on training in animals and models, assistance with others in laparoscopy, and in personal experience with laparoscopy. Probably, there is also a vaguely defined natural or acquired "hand-eye" skill. It appears, however, that most surgeons who are willing to enthusiastically apply themselves can become skilled and competent. There is apprehension in the beginning about getting complications requiring re-operation or being unable to get proper visualization or trochar insertion requiring conversion to open cholecystectomy. Once a surgeon feels comfortable with the procedure, a physician as assistant is unnecessary. The procedure can be done with one assistant but it is much easier if there are two.

After adequate experience, surgeons can expect to perform 96-98 percent of cases without conversion to laparotomy. Because of the high visibility between hospitals and between surgeons to perform this new procedure, there is some degree of pride and reluctance to "lose face" in being found to have to convert to an open procedure or in having a complication. A better attitude among us all would be that there is no "shame" in having to convert for whatever reason. At present, hospital medical records cannot screen laparoscopic cases automatically because there is no code number and one is not expected before October, 1991. As statistics are gathered, some surgeons' results will look better than others. This could be related to technical skill. It is likely, however, that differences will be due to other factors. These include: (a) Risk selection. Some surgeons may reject all patients with acute cholecystitis for laparoscopy and some may take all comers. This would give skewed results for favorite PRO items—complications and length of stay. (b) Some surgeons may have more high risk patients referred to them. (c) Patients who have surgery at 8:00 a.m. are more likely to go home the same day than those who have it at 1:00 p.m. I expect that the incidence of same day surgery will be shown to be related to the time of day of surgery. Surgeons who routinely get 8:00 a.m. times will have a better LOS record than those who don't. (d) Some surgeons push harder than others to get patients home earlier. Having experienced these procedures and these thoughts, my present attitude is to continually remind myself to put the safety, comfort, and health of the patient first.

CONCLUSIONS

It does not take several years to realize that laparoscopic cholecystectomy and other laparoscopic procedures in general surgery are not a fad. There is very little reason to subject the typical patient with gall bladder disease to open cholecystectomy. Since at present it is felt that anyone doing this operation should be thoroughly familiar with open cholecystectomy, it will be difficult in the future for surgeons in training to have the perspective that surgeons now learning the new operation have. Laparoscopic cholecystectomy certainly meets minimal requirements to replace open cholecystectomy: minimal or less pain, shorter or no hospital stay, little or no scarring of the skin, and maybe most important of all to family, business, and society, much earlier return to normal activity. For the surgeon who is competent and experienced, this operation is as safe as and has fewer complications than open cholecystectomy. This experience also demonstrates that it is quite appropriate for laparoscopic cholecystectomy to be performed in a community hospital. ☐

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ADDENDUM

Twenty additional cases have been done without complications. Thirty percent of these were discharged on the day of surgery. Analysis of these cases answers the concern in the discussion above about the relationship between the time of surgery and the length of stay. Surgery was completed by noon on 83 percent of patients who were discharged on the day of surgery. Seventy percent of patients who went home on the morning following surgery did not have completion of surgery until after noon. The average operating time decreased to 68 (from 86) minutes and for elective cases only, to 59 minutes. Of the last 50 attempted cases, all were completed without conversion. The average length of stay decreased to 0.9 days. It will be interesting for surgeons to measure the effect of experience upon their results.

CLINICAL MANIFESTATIONS OF PERINATAL SEXUALLY TRANSMITTED DISEASES

HAROLD R. RUBEL, M.D.*
SAMI B. ELHASSANI, M.D.**

> *I said the small pox has gone out of late;*
> *Perhaps it may be follow'd by the great.*
>
> —George Gordon, Lord Byron (1788-1824)
> Don Juan, Canto, Stanza 130

Fetuses and neonates are exposed to a growing list of serious and potentially fatal sexually transmitted diseases (STD). Among the diseases transmitted principally by sexual intercourse and discussed in this article are: chlamydia trachomatis conjunctivitis and pneumonia, congenital syphilis, gonococcal ophthalmia, laryngeal papillomas, and neonatal herpes simplex virus infection. This article is an attempt to review the different clinical presentations of the aforementioned sexually transmitted diseases in pregnant women and neonates.

As do adults, infants with STDs may present clinically with signs and symptoms ranging in severity from a mild to a severe and even lethal infection. Thus, one of the most important aspects in management of STDs is identification of the infectious agent and early recognition of the clinical presentation of the disease.

CHLAMYDIA TRACHOMATIS INFECTION

Chlamydia trachomatis infection remains a major perinatal problem in the United States, infecting three to four million Americans, of which five percent are pregnant women.[1] Frequently isolated from women with mucopurulent cervicitis (Fig. 1), the organism is responsible for between one fourth and one half of all patients with pelvic inflammatory disease.[2] Of particular note is the increased prevalence of C. trachomatis infection among sexually active adolescents. One study found it occurring in 35 percent of patients, with more than two-thirds of infected adolescents being asymptomatic.[3]

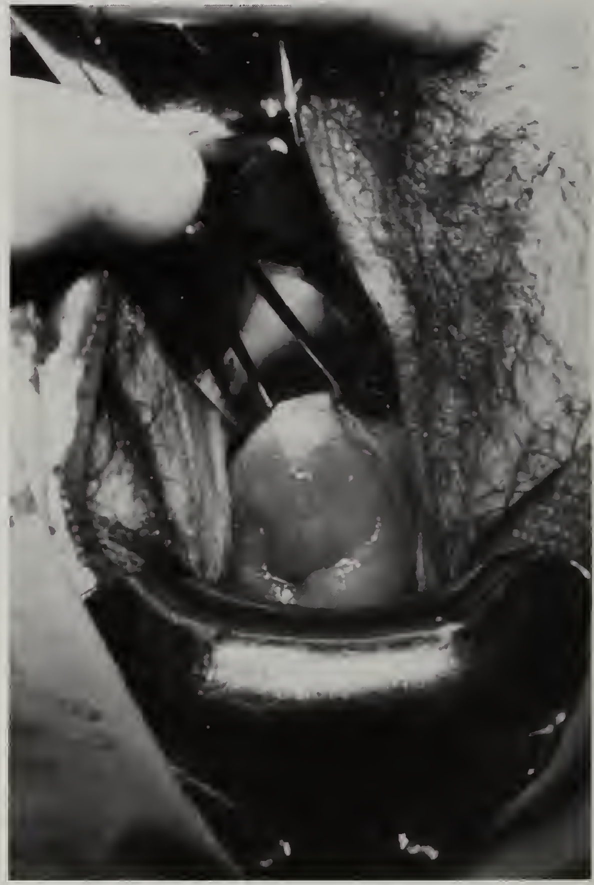

FIGURE 1. Chlamydia trachomatis cervicitis.

The frequency of STDs in the population and the degree of maternal colonization are the two factors directly related to the incidence of neonatal C. trachomatis. Infants usually acquire the disease during passage through an infected birth canal. The two clinical manifestations of the condition during infancy are conjunctivitis, which annually affects 73,800 neonates and pneumonia which occurs in 37,100 infants in the United States.[4] The similarities between ocular signs of C. trachomatis infection and those of other neonatal ophthalmic infections are often considerable; thus, it is not surprising that confusion exists in the diagnosis and management of the disease. Furthermore, affected infants may present clinically with extremely variable signs ranging from mild erythema of the bulbar conjunctivae to copious mucopurulent discharge, chemosis, and pseudomembrane formation. While the majority of patients recover even without treatment after running a course of weeks to months, a few infants with severe infection may end up with conjunctival scarring and corneal micropannus.

---

* Deceased.

** Address correspondence to Dr. Elhassani at 751 North Church Street, Spartanburg, SC 29303.

C. trachomatis pneumonitis is a syndrome characterized by persistent upper respiratory symptoms of rhinorrhea and cough in infants between four and 11 weeks of age. The organism is now known to be responsible for 30 to 45 percent of pneumonitis in patients under six months of age hospitalized. Occuring in one to six infants born to infected women, the signs of C. trachomatis pneumonitis are tachypnea and occasional expiratory wheeze in an afebrile infant with staccato cough. Radiologic findings include interstitial infiltrates, hyperexpanded lungs, atelectasis and rarely lobar consolidation.

CONGENITAL SYPHILIS

> *Two minutes with venus,*
> *two years with mercury*
> —J. Earle Moore (1892-1957)

The aphorism shown above highlights the arduous process of treating syphilis in the era before the discovery of penicillin, credited as a cure for the disease. Despite a dramatic decline in reported cases in the late 1950s, the rates of syphilis and of congenital syphilis among women of childbearing age have risen abruptly since 1984.[5] Congenital syphilis continues to remain an important clinical problem despite the availability of prenatal screening and the aggressive treatment of affected infants. Diagnosis of the condition usually relies on prenatal history, physical examination, radiologic studies and serologic testing.

The clinical manifestations of congenital syphilis include hepatosplenomegaly (Fig. 2), snuffles, prolonged hyperbilirubinemia, pseudoparalysis, and edema. The dermatologic signs include maculopapular eruptions, generalized or localized desequmation, petechiae, and vesiculobullous eruptions (Fig. 3). Because the disease is acquired relatively late in pregnancy, the eye findings are usually inflammatory rather than developmental. Eyelid chancers, dacrocystitis, conjunctivitis, oculomotor pareses, acute and chronic iritis, iridocyclitis, chorioretinitis and most com-

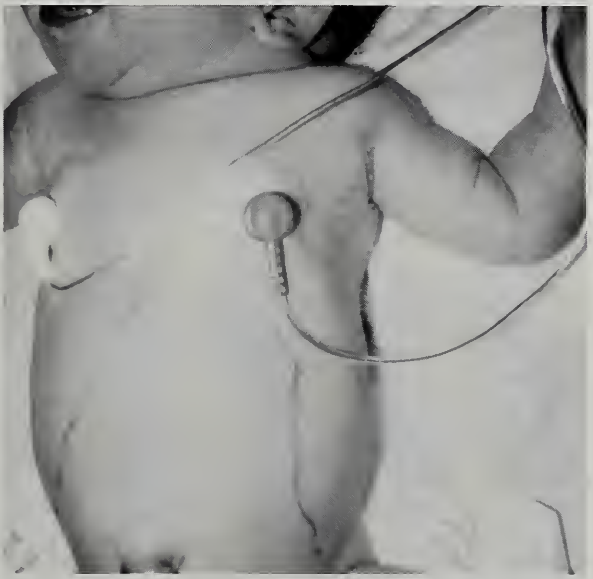

FIGURE 2. Hepatosplenomegaly in an infant with congenital syphilis.

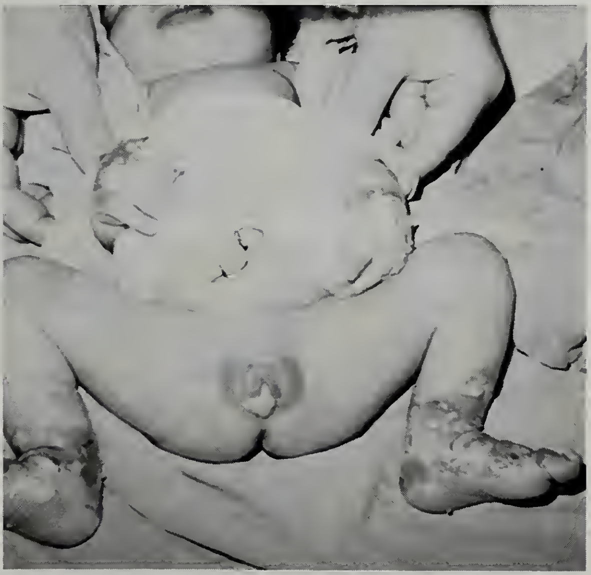

FIGURE 3. Vesiculobullous lesions on hands and feet of an infant with congenital syphilis.

monly interstitial keratitis have all been observed in affected infants.[6]

GONOCCOCAL OPHTHALMIA

A potentially destructive agent to eyes of neonates, N. gonorrhoeae bactrium is passed to infants through the birth canal of infected mothers. Delay in recognition and treatment of the condition may result in corneal ulceration and perforation. Clinical signs of ophthalmia neonatorum usually appear at two to four days after birth, with a hyperactive conjunctivitis characterized by a marked purulent discharge, chemosis, and edema (Fig. 4).

LARYNGEAL PAPILLOMA

The association of infantile laryngeal papillomas with types 6 and 11 of human papilloma virus has been reported by Abramson et al.[7] The viral infection is the most common sexually transmitted disease in the United States and thus is a major public health problem afflicting at least 30 percent of sexually active adolescents.[8] Ranging in clinical presentation from anogenital condyloma acuminata in adults (Fig. 5) and children to cervical cancer, HPV is the primary cause of respiratory papillomatosis in children. Chipps et al[9] reported a series of four infants who developed symptoms of laryngeal papilloma within the first six months of life and eventually died from the disease, despite endoscopic laser surgery and medical and immunologic therapy, thus the importance of age of presentation as a prognostic factor for survival.

HERPES SIMPLEX VIRUS INFECTIONS

In 80 percent of babies infected with herpes simplex, the causative organism is herpes simplex virus type 2 (HSV-2),[10] commonly known as genital herpes. Although true transplacental congenital infection of the human fetus with the virus is possible, the majority of infected neonates acquire the infection at, or near delivery, by direct contact with active lesions in the birth canal. Factors influencing transmission and severity of infection to the fetus and neonate include the duration and quantity of viral excretion, mother's antibody status to the

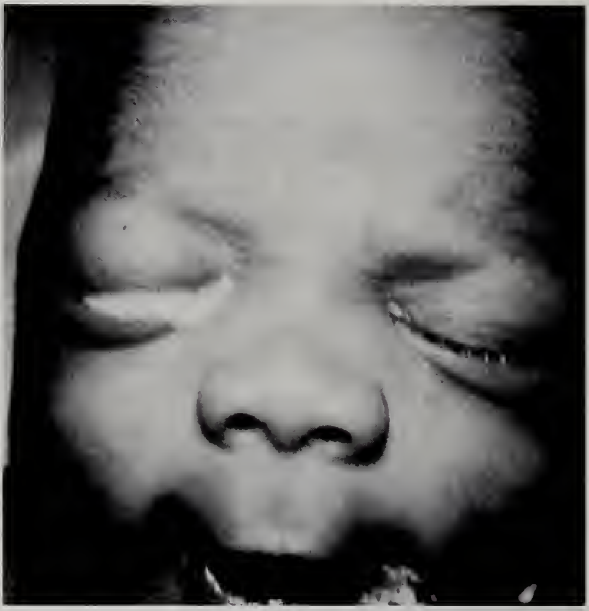

FIGURE 4. Gonoccocal ophthalmia neonatorum with purulent discharge and edema in both eyes.

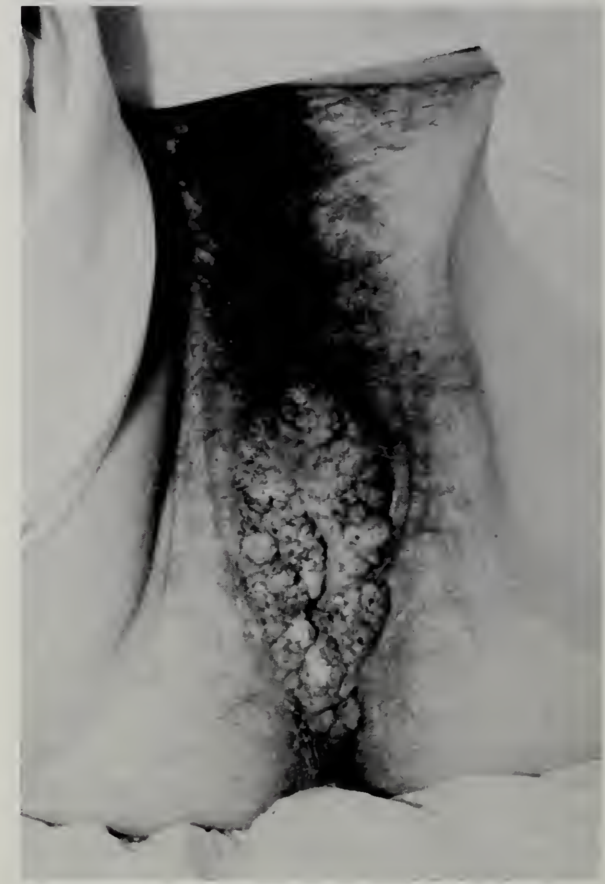

FIGURE 5. Anogenital condyloma acuminata in a woman infected with human papilloma virus.

virus and duration of ruptured membrances. Furthermore, the liberal use of fetal monitoring devices such as fetal scalp monitors may increase the risk of neonatal herpes simplex virus infection. The diagnosis of the disease in neonates is often based on clinical manifestations categorized into localized lesions or serious disseminated condition. Among the localized category are skin and mouth lesions and eye findings.

The classic skin lesions are numerous scattered vesicles on an erythematous base (Fig. 6). The scalp is the most common site for the typical clustered vesicles. Almost 30 percent of infants with localized lesions will eventually develop evidence of neurologic impairment.[11] Disseminated infection is manifested as pneumonitis, hepatitis, intravascular coagulopathy and central nervous system involvement. The effect on the brain results in a high morbidity and mortality, with as many as 75 percent of affected infants having some degree of psychomotor retardation, often in association with microcephaly (Fig. 7), hydranencephaly, porencephalic cysts, spasticity, blindness, chorioretinitis or learning disabilities. ☐

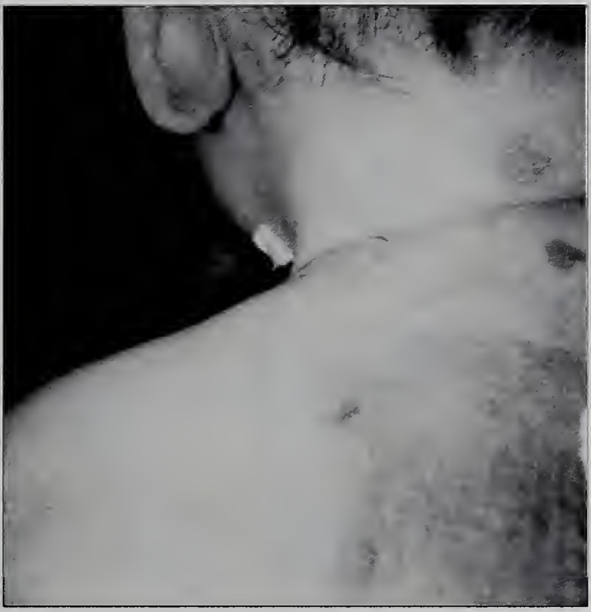

FIGURE 6. Disseminated cutaneous neonatal herpes simplex virus infection. Note the clusters of vesicles.

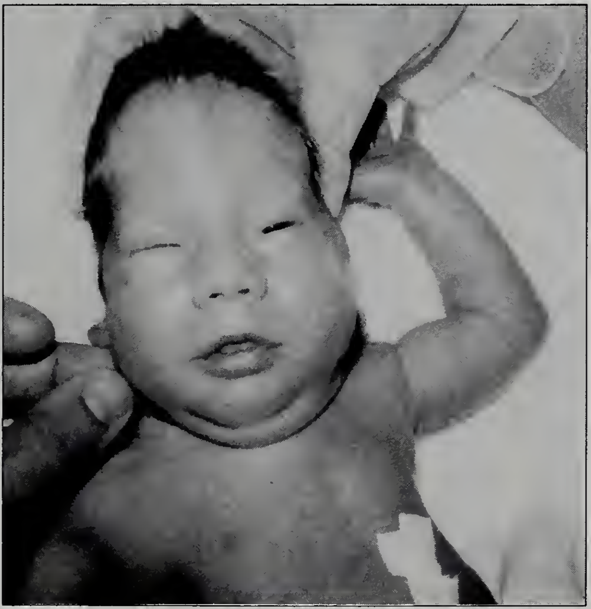

FIGURE 7. Microcephaly in an infant with herpes simplex encephalitis.

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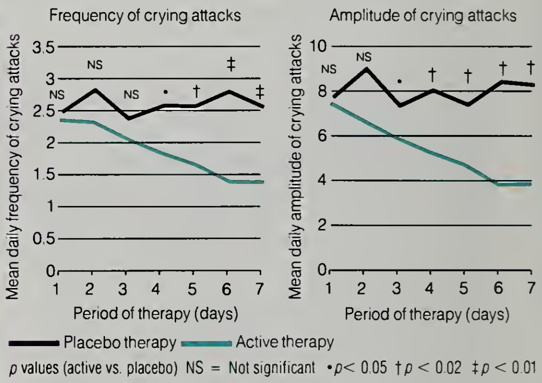
Family therapy for colic.

The excessive crying of colic puts a strain on the most loving family–and often on their physician as well. And whatever the cause of colic, one fact is clear:

Gas is often part of the colic problem.

New Phazyme Drops contains simethicone, which can safely break up gas and bring baby relief. That's why it can help whenever colic is a problem.

Significantly reduces crying of colicky infants.[1]



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Helps you through the colic phase.

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1. Kanwaljit SS, Jasbir KS. Simethicone in the management of infant colic. *Practitioner*. 1988;232:508.

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SCMA NEWSLETTER

MAY 1991

ANNUAL MEETING HIGHLIGHTS

Elections

Officers and trustees elected or reelected at the 143rd Annual Meeting of the SCMA are as follows: President-Elect, Bartolo M. Barone, MD; Secretary, Stephen A. Imbeau, MD; Treasurer, S. Nelson Weston, MD; District 1 Trustees, Richard E. Ulmer, MD, and John B. Johnston, MD; District 3 Trustee, George P. Cone, Jr., MD; District 5 Trustee, Roger A. Gaddy, MD; District 6 Trustee, Sompong Kraikit, MD; District 7 Trustee, J. Capers Hiott, MD; and District 9 Trustee, Carol S. Nichols, MD.

J. Chris Hawk, III, MD, SCMA President, was elected Alternate Delegate to the AMA, and Donald G. Kilgore, Jr., was reelected as Delegate to the AMA. O. Marion Burton, MD, was reelected as Speaker of the House, and Benjamin E. Nicholson, MD, was reelected Vice Speaker of the House.

At the reorganizational meeting of the Board of Trustees, Edward W. Catalano, MD was reelected Chairman of the Board and James B. Page, MD, was reelected Vice Chairman of the Board. Serving as Clerk will be James M. Lindsey, Jr., MD, and as Executive Committee Member at Large will be Carol S. Nichols, MD.

Resolutions

Resolutions C-13 and C-14 submitted by the Medical Aspects of Sports Committee were adopted as submitted. Resolution C-13 calls for continued support of school nurses by DHEC and the State Board of Education, and Resolution C-14 reaffirms SCMA support of the Comprehensive Health Care Curriculum in SC and recommends that a representative from each county medical society serve on local advisory committees. Resolution C-15, also submitted by the Medical Aspects of Sports Committee, was adopted as submitted and recommends physical education from kindergarten through twelfth grade, with a minimum number of hours, and with the option of additional hours with credit.

Also adopted as submitted, Resolution F-4 from the SCMA Board of Trustees commends Bartolo M. Barone, MD; William Fairey, MD; Boyce Lawton, MD; Donald Kilgore, Jr., MD; John F. Sutton, MD; C. Tucker Weston, MD; Jack A. Evans, Jr., MD; Walter J. Roberts, Jr., MD; Euta M. Colvin, MD; John R. Hunt, MD; B. Daniel Paysinger, Jr., MD; Roland L. Skinner, MD; John W. Brown, MD; and

Charles R. Duncan, Jr., MD; for their outstanding leadership, commitment and dedication towards addressing the medical liability problems of our state.

Resolution F-5 submitted by the Charleston County Medical Society was adopted as amended. The amended resolution calls for SCMA endorsement of a policy of cooperation among healthcare providers and health-related agencies to minimize the inappropriate acquisition of controlled drug prescriptions.

Resolution F-6 submitted by the South Carolina Society of Ophthalmology was also adopted as amended. The amended resolution asks that SCMA adopt the policy that laser surgery be performed only by individuals licensed to practice medicine and surgery or by those categories of practitioners currently licensed by the state to perform surgical services.

Bylaws Changes

The House adopted changes to the SCMA bylaws, as follows: Section 1.42 regarding honorary membership now calls for a minimum of ten years as a regular member of the SCMA along with recognition of the years a member might have accumulated as a member of the component medical society of another state.

Section 4.221 increases the number of consecutive terms for Trustees from three to four.

Awards

Mike Jarrett, DHEC Commissioner, received the prestigious President's Award, presented by outgoing president John W. Simmons, MD.

Co-recipients of The Thomas A. Roe and Shirley W. Roe Award for the best article by a practicing physician published in The Journal were C. Don Bessinger, Jr., MD, and Jeff Z. Brooker, MD. Dr. Bessinger's article, published in December, 1990, was titled "Living Ethics: Homeostasis and Ethical Principle." Dr. Brooker's paper, "Combined Pharmacologic and Exercise Stress Myocardial Scintigraphy...," appeared in the March, 1990 issue.

MEDICAID UPDATE

Accepting Medicaid

Physician participation in the Medicaid program is voluntary. The SCMA requests that each physician accept his or her fair share of Medicaid patients. There are occasions when it is appropriate to decide not to accept a patient's Medicaid, and this update is written to help understand the physician's rights and responsibilities.

A physician should agree before treatment is rendered whether to accept a patient's Medicaid benefits.

If a physician accepts a patient's Medicaid benefits, it is for the course of treatment and all services rendered by the physician during this course of treatment must be billed to Medicaid. Only non-covered services may be billed to the patient.

If a physician decides not to accept a patient's Medicaid benefits, the patient has the option of finding another physician or staying in the physician's practice as a private pay patient. The SCMA and the Health and Human Services Finance Commission advise you to obtain a written statement from the patient, if the patient agrees to be a private patient. However, the physician retains the option to bill either Medicaid or the patient/private insurance if the patient and physician's office have not discussed this.

If your patient qualifies for Medicaid but you are caring for him or her as a private patient, the patient is responsible for any copay/deductible required by his or her private insurance unless you agree to waive this copay/deductible. HHSFC will only provide reimbursement in addition to private insurance if the private insuror reimburses less than the usual Medicaid payment for the service or if the service is covered by Medicaid but not the private insuror (such as some types of preventive care).

Physicians are advised to establish an office policy regarding the conditions under which they will accept a patient's Medicaid benefits. This allows for consistent handling of your Medicaid patients. Federal law prohibits discrimination based on age, race, color, national origin or handicapping condition for any program receiving Federal funds, such as Medicaid.

Automatic Eligibility for Newborns

Beginning January 1, 1991, infants born to Medicaid eligible women are entitled to Medicaid benefits until their first birthday if the following conditions are met: (1) the infant lives with the mother, and (2) the mother continues to be eligible or would continue to be eligible if she were still pregnant.

No separate application is required for the newborn. The delivering hospital initiates the eligibility process with DSS on behalf of the newborn and no redetermination is made of the mother's eligibility. Eligibility is made retroactive to the date of birth.

Routine newborn care in the hospital may be billed under the mother's Medicaid number. Any services rendered after the newborn is discharged must be billed under the child's own Medicaid number.

Norplant Contraceptive

Effective on or after April 1, 1991, the State Health and Human Services Finance Commission (SHHSFC) sponsors coverage of the newly developed Norplant System of contraception. The education component may be billed using code S0098. The insertion and cost of the Norplant should be billed using code S0097. Please attach a copy of your Norplant invoice showing the cost of the implant so you will be reimbursed your cost plus a fee for the insertion of the implant. The appropriate level office visit code may be billed and the injection code for any anesthetic agent administered. You will receive a bulletin shortly with details of SHHSFC policy.

1991-1992 Budget

The SCMA is optimistic that the Medicaid program will receive sufficient funds so that there will be no reductions in services/reimbursement. However, if necessary, SHHSFC is prepared to implement limits on services and fee reductions effective June, 1991. You will be notified in advance of any reductions or restrictions on services.

Claims Processing Problems

Over 5,000 claims were submitted to SHHSFC during the month of April without physician's or group Medicaid numbers in block 31. Claims without the Medicaid numbers are being researched and processed, but this research delays the claims entering the system to process by three to five days. Letters are being sent to physicians and groups to notify them of the problem. Please share this information with your billing staff as this is a major administrative problem for SHHSFC's claims processing unit.

Recently a large number of claims were returned to physicians stating their claims were too light to process and microfilm. A test run of claims were microfilmed and found many claims being sent back were processable. SHHSFC regrets the error and apologizes for any frustration this may have caused you and your staff. The agency is required by Federal law to microfilm every claim processed. If your staff would insure the ribbons on your printers are changed frequently and printers are aligned to print in the appropriate fields on the claim, this would aid the claims processing unit. Your cooperation with the requirements is appreciated.

Questions should be directed to your Medicaid program manager at in Columbia at 253-6134 or to Barbara Whittaker at the SCMA.

MEDICARE UPDATE

An April Medicare Advisory has been mailed to physicians by Blue Cross and Blue Shield. Please note that it contains some of the Medicare coverage policies.

Watch for the July/August, 1991 Medicare Advisory. Place of service codes will be changing effective September, 1991.

The new anticipated 1500 claim forms have been targeted for use beginning September, 1991. Watch for details.

Do not use the place and type of service codes which are on the physician remittance. These are different from the codes filed by you. Currently, you are to continue filing the same type of service codes you are now using.

If you have any inquiry, you should submit it on a PSI form to the attention of Provider Services, with a copy of the claim in question attached. These forms may be obtained from your provider representative.

Direct Medicare questions to Medicare Provider Services in Columbia at 754-1968 or to Cindy Osborn at the SCMA.

NEW DEA REQUIREMENTS

All DEA registrants were mailed an April 1 notice from DHEC which you should read carefully. Of special interest is the new requirement that the steroids listed below are now placed into Schedule III under Federal law: boldenone; chlorotestosterone (4-chlortestosterone), clostebol, dehydrochlormethyltestosterone, dihydrotestosterone (4-dihydrotestosterone), drostanolone, ethylestrenol, fluoxymesterone, formebulone (formebolone), mesterolone, methandienone, methandranone, methandriol, methandrostenolone, methenolone, methyltestosterone, mibolerone, nandralone, norethandrolone, oxandrolone, oxymesterone, oxymetholone, stanolone, stanozolol, testolactone, testosterone, trenbolone, and any salt, ester or isomer of a drug or substance described or listed above, if that salt, ester or isomer promotes muscle growth.

Sometime this month, the DEA will publish regulations which may or may not exempt certain drug products containing steroids from the Schedule but currently THERE ARE NO EXEMPTIONS.

If you have questions, please call DHEC in Columbia at 737-3999.

FROM THE SCMA ENVIRONMENTAL PROTECTION COMMITTEE

More tips for your home and office to help save our environment:

1. Don't use styrofoam; use paper or, better still, china cups. Styrofoam releases chlorofluorocarbons which are responsible for 15-20 percent of the global warming and also destroy the earth's ozone layer. Increased warming could make a desert of South Carolina. Depletion of the ozone layer increases skin cancers and cataracts.

2. Recycle all of your soft drink cans. Work out a system in

your office for this and other recycling. Many plastic containers can also be recycled. Put one office worker in charge of getting this recycling system started and keeping it running smoothly.

3. Send us your suggestions for items to include in this newsletter each month.

TOLL-FREE HELPLINE FOR ELDERLY AMERICANS

Since it opened five years ago, the South Carolina program of the National Eye Care Project has received more than 3,737 calls and has referred more than 2,462 needy elderly to volunteer ophthalmologists within the state. The physician has agreed to provide a comprehensive medical eye examination and care for any condition diagnosed, at no out-of-pocket expense to the patient. To qualify for a referral, the patient must be a US citizen or legal resident, 65 or older, who does not have access to an ophthalmologist he or she has seen in the past. This is not an eyeglasses program and prescription drugs or hospital care are not covered.

The toll-free Helpline of the National Eye Care Project is 1-800-222-EYES (1-800-222-3937).

PUBLICATIONS/VIDEOTAPES/TELEVISION SERIES

The AMA has published a revised third edition of its Guides to the Evaluation of Permanent Impairment. The book is available for $36 to AMA members and $45 for non-members. To order, call (312) 464-2000.

A videotape entitled "Practice Parameters: Impact on Liability," is available on loan from the SCMA. This video describes the legal implications of practice parameters for physicians. To request the tape, contact Suzanne Hellams at SCMA Headquarters.

The SCMA has received from the SC Department of Mental Retardation materials on the causes and prevention of mental retardation and related disabilities. This information is written in simple terms and may be helpful to your patients, especially expectant mothers. To inquire about this or any other information from the SCMA library, contact Suzanne Hellams at SCMA Headquarters.

"Living Well America!," the AMA's medical television program for the public, is scheduled to debut this summer. Airing at 9:00 am Sundays on The Discovery Channel, the 60-minute program will cover personal health matters, diet and nutrition, lifestyle choices and decisions, environmental health, sports and exercise news, and travel health tips. For more information, contact AMA Medical Television, (312) 464-5395.

DR. CHISOLM'S INHALER: A RARE CONFEDERATE MEDICAL INVENTION*

F. T. HAMBRECHT, M.D.**
M. RHODE
A. HAWK

Despite romantic tales about biting bullets, soldiers during the American Civil War were almost always anesthetized with either chloroform or ether during major surgical procedures such as limb amputations and joint excisions. Chloroform was generally preferred because unlike ether, it was nonflammable. This was especially important when operating at night with illumination by an open flame. Unfortunately for the Confederate States of America, a blockade was imposed along its coasts by the Union Navy making importation of chloroform increasingly difficult as the war progressed. To conserve this scarce drug, Confederate surgeon J.J. Chisolm invented an ingenious portable inhaler.[1] Recently, new information has been discovered about the value of this inhaler, how it was used, and how its reputation spread, leading to its being marketed throughout the United States for many years after the war.

THE INVENTOR

Julian John Chisolm was born in Charleston, South Carolina, in 1830 and received his medical degree from the Medical College of the State of South Carolina in 1850. Pertinent to the invention of the inhaler was Chisolm's interest in military medicine.

Before the Civil War he spent time in European military hospitals during the Crimean War studying treatment techniques.[2] This experience served as the basis for the first Confederate surgical manual which he published in 1861 with subsequent editions in 1862 and 1864.[3] The exposure also made him a valuable asset to the newly formed Confederate Medical Department which had few physicians with firsthand knowledge of military medicine. During the war, after a brief period in Richmond, Virginia, setting up hospitals, Dr. Chisolm served as a surgeon and as a medical purveyor for the medical department, first in Charleston and later in Columbia, South Carolina. Also with Dr. Joseph LeConte, he set up a Confederate medical laboratory for preparing and testing drugs in Columbia.

THE INVENTION

Soon after the war, Dr. Chisolm and Dr. George Alexander Otis, the curator of the recently founded Army Medical Museum in Washington, began a correspondence which would continue until Dr. Otis' death in 1881. Chisolm sent Otis one of his inhalers which is believed to be the actual device illustrated in Figure 1 and is probably the only surviving Confederate manufactured Chisolm inhaler. In late 1866, Otis informed Chisolm that he had "referred the ingenious inhaler to Bvt. Major Wm. M. Notson, Asst. Post Surgeon in Washington, D.C. who plans to employ your instrument for induction of anaesthesia in several surgical cases. I will ask Asst. Surgeon Wm. Thomson, in charge of the Post Hospital here to experiment with it also."[4]

Although no written reports could be found, these experiments must have been successful because Dr. George F. Shrady, editor of the Medical Record in New York wrote a glowing editorial in 1867 claiming that "those who tried this inhaler speak of it in unqualified praise."[5]

During the war, George Tiemann & Company was a major supplier of surgical instru-

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* From the Neural Prosthesis Program, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, Maryland; and the National Museum of Health and Medicine, Armed Forces Institute of Pathology, Washington, D.C.

**Address correspondence to: F. Terry Hambrecht, M.D., NIH, Federal Building, Room 916, Bethesda, Maryland 20892.

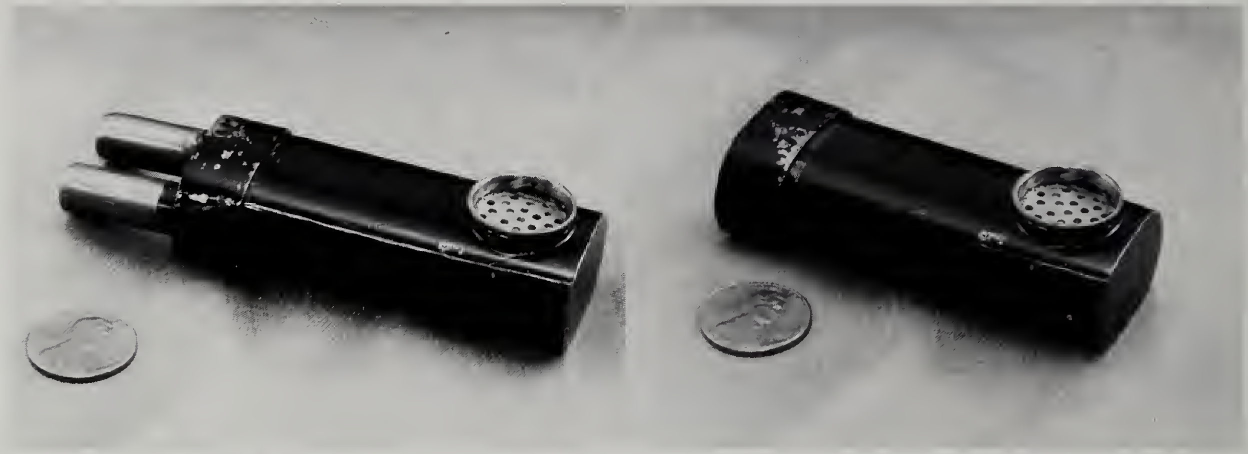

Figure 1a **Figure 1b**

FIGURE 1a & b. Handmade Chisolm inhaler fabricated of brass with a black painted finish and a piece of sponge inside the flattened cylinder. This is believed to be the original model sent by Dr. Chisolm to Dr. George Otis of the Army Medical Museum in 1865 or 1866. It is shown in both its operational (a) and compact configurations (b). Dimensions in the operational configuration are 3¾ inches (length), 1¼ inches (width), ⅞ inches (thickness), while in the compact configuration the length is reduced to 2⅞ inches. The flattened cylinder, alone, is 2½ inches long and 1⅛ inches wide which are very close to the dimensions cited by Otis in the MSHWR. (Courtesy of the Historical Collections, National Museum of Health & Medicine, Armed Forces Institute of Pathology, Washington, DC. The original artifact number was AMM 4910 but is now M-710-00004.)

ments to the Union Army and, indirectly through captured and smuggled supplies, to the Confederate Army. After the war, George Tiemann was quick to realize the commercial potential of Chisolm's inhaler. The illustration of the inhaler accompanying Dr. Shrady's editorial reveals the G. Tiemann Co. imprint stamped on the case which implies that Tiemann was manufacturing the instrument in early 1867 just a year and a half after the end of hostilities.

As part of its advertising, Tiemann & Co. republished Shrady's article on the inhaler in a collection of promotional brochures.[6] This probably expanded sales because Shrady pointed out that "Dr. Chisolm has long used it as a chloroform inhaler, but we see no reason why its usefulness should not be extended to include the administration by inhalation of any of those volatile preparations which are now deservedly considered remedies of no small value in treatment of affections of the throat." Dr. Shrady explained that the principle of the instrument was similar to a surgeon pouring anesthetic on "the folded handkerchief or towel which we have always considered the most convenient and safe method of administering chloroform" without the disadvantage of having been made to "take chloroform whilst administering it to our patients; and as the greater part of the chloroform poured upon the cloth evaporates into the air of the room, all persons around the patient are more or less influenced by the evaporation. The object of the inhaler is to confine the volatile fluid to the patient alone." In operation "the patient inhales through the nose alone; and should any of the annoying sensations about the throat be experienced, he can immediately relieve himself by opening his mouth. As by its use the patient quietly passes into sleep, all struggling is avoided."

The Tiemann brochure made the following claims for the inhaler, "lst, its simplicity; 2d, safety in its use as a mode of administering chloroform, as the patient must always get a diluted vapor, sufficiently mixed with atmospheric air; 3d, economy in the use of chloroform, as one drachm [1/8 ounce] is made to do the full work of one or two ounces upon the handkerchief; 4th, the unassuming appearance of the instrument, which does not frighten timid patients . . . 5th, Portability. The entire instrument is not much larger than an ordinary lancet case, and can be readily carried in the vest pocket, without inconvenience." Such a Chisolm inhaler, manufactured by Tiemann. after the war, is shown

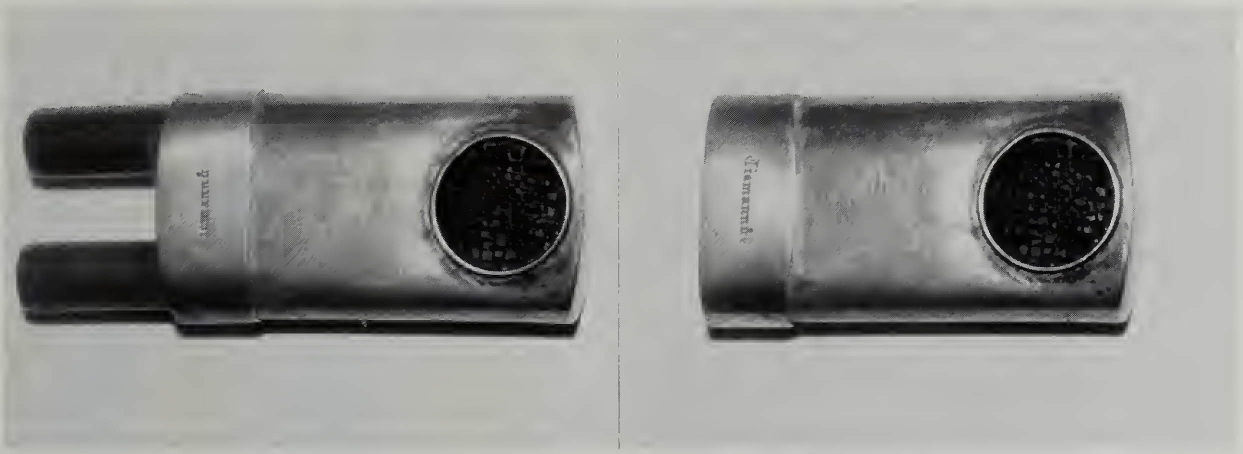

Figure 2a **Figure 2b**

FIGURE 2a & b. Chisolm inhaler manufactured by George Tiemann & Co., New York, after the Civil War. This model appears to have a German silver body and hard rubber nose pieces. The original sponge or folded cloth is missing from the inside. Dimensions in the operational configuration (a) are 3 inches (length), $1\frac{1}{4}$ inches (width), and $\frac{9}{16}$ inches (thickness). In the compact configuration (b) the length is reduced to $2\frac{5}{16}$ inches. (Courtesy of the Waring Historical Library of the Medical University of South Carolina, Charleston, SC.)

in Figure 2.

A major effort was made by the Surgeon General's Office of the United States Army both during and for about 15 years after the Civil War to collect case reports, medical statistics, details on surgical instruments, etc. for publication in the six volume Medical and Surgical History of the War of the Rebellion (MSHWR). Dr. Otis assumed major responsibility for the three surgical volumes. In doing so he wrote to Chisolm in 1879 inquiring, "Where you speak of chloroform at page 427 of the third edition of the Manual you make no allusion to the apparatus for chloroform inhalation devised by you. . . . Please tell me whether this inhaler was much employed in the Confederate Army practice and by what maker it was fabricated prior to the conclusion of the war."[7] Although Chisolm's reply has been lost, there are clues that suggest possible answers to Dr. Otis' questions. Since Chisolm did not mention the inhaler in the 3rd edition of his manual which was published in 1864 and the editing of this edition was probably completed by the end of 1863, the inhaler was most likely invented in 1864 or early 1865. As to the first maker of the inhaler, it couldn't have been George Tiemann because he was in the North. However, Chisolm often used Frederick W. Thauss,in Charleston, to make surgical instruments such as bullet forceps.[8] Since Mr. Thauss was a locksmith by trade, there is a good chance that he made the original inhaler. The question of whether the inhaler was much used in Confederate practice is harder to answer. The fact that only one Confederate manufactured model has been found and the presumed late invention of the device would suggest that it saw very limited use. Also there was no mention of the instrument in the *Confederate States Medical and Surgical Journal* which was published from January 1864 to February 1865.

Dr. Otis felt that the inhaler was a significant medical advancement resulting from the Civil War and included both a description of it and an illustration in the MSHWR.[9] He noted "In the southern armies, where chloroform was scarce, Surgeon JJ Chisolm, finding that much chloroform was wasted" by conventional methods "employed a flattened cylinder two and half inches long and one inch wide in its broadest diameter, having in one of its broadest surface a perforated plate. Attached to the cover are two nose pieces. When the instrument is not in use these projections can be pressed into the cylinder, thus diminishing the size of the instrument. In the interior of the cylinder is found a piece of sponge or what is much better a bent wire, over which is folded a piece of cotton cloth. The chloroform when dropped through the perforated plate is received upon the sponge or folded cloth, which offers an extended surface for evaporation." It is noted, however, that Otis did not specifically provide answers to the questions he addressed to Chisolm in 1879.

Twenty-four years after the war in the 1889 issue of the American Armamentarium Chirurgicum, a trade catalog published by George Tiemann & Co., the inhaler was touted as an ether inhaler, perhaps reflecting the increased popularity among civilian surgeons of ether over chloroform. The catalog stated that the instrument was now manufactured in either German silver or nickel-plated brass.

As necessity is the mother of invention so this ingenious and truly useful inhaler was invented by Dr. J.J. Chisolm during the Confederacy's period of greatest need. Fortunately, its concept survived the war to serve the populations of both of the combatants. ☐

ACKNOWLEDGEMENTS

The authors would like to express their appreciation to Ms. Betty Newsom, Curator, Waring Historical Library; and Ms. Jeri Wallace, Librarian, Wessels Library, for their help and encouragement in the preparation of this paper.

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Editorial

WELL DONE!

We thank those SCMA members who were called to active duty during the recent Persian Gulf conflict. A list of those known to us appears below:

James W. Adamson, M.D., Conway
A. Mason Ahearn, M.D., Georgetown
Howard C. Bean, Jr., M.D., Spartanburg
John H. Brooks, M.D., Spartanburg
Kenneth M. Caldwell, M.D., Charleston
John T. Caskey, M.D., Columbia
Donald J. Copley, M.D., Columbia
Edwin Cruz, M.D., Aiken
Rex Dillingham, M.D., Columbia
Patrick Esposito, M.D., Spartanburg
Vasant Garde, M.D., Lexington
Charles H. Ham, M.D., Columbia
Stuart Hamilton, M.D., Columbia
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Harry Heyward Nettles, M.D., Spartanburg
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Dana A. Rawl, M.D., Blythewood
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Keith Waters, M.D., Easley
Norris W. Whitlock, M.D., Greer
William F. Willoughby, M.D., Columbia
Christie W. Winkler, M.D., Anderson
She S. Wong, M.D., Bennettsville

It seems hardly necessary to add our gratitude also to those not known to us and, for that matter to *all* SCMA members who have served during *all* of the wars of this century.

What more need be said?

—CSB

Letter to the Editor

To the Editor:

I have several comments to make concerning the paper by Dr. Henry P. Leis, Jr. entitled "Breast Cancer: Highlights for the Nineties" which appeared in your January 1991 issue.

In general the information in this article is accurate, educational, and informative, but in specifics, it is misleading and biased. In respect to the statement about local excision and radiation therapy for suitable candidates, I would take issue with the following points.

1) Radiotherapy is time consuming and must be given by a highly skilled physician and personnel. This situation exists within 30-40 minutes of most any female in South Carolina, therefore, it should not be a reason to recommend against conservative surgery and radiation therapy.

2) No female would be allowed by a radiotherapist to make a choice of the treatment that was inappropriate. To the contrary, I have seen many patients within the past ten years who have had mastectomy by surgeons without a choice.

3) Where is the evidence that women's breasts are adversely affected by radiation therapy and where are the long term results? Thousands and thousands of patients throughout the world have had radiation therapy to their chest wall without long term effects. We in the radiation therapy community have fought a long uphill struggle to have conservative treatment accepted and placed in a position equal to mastectomy. I frankly think that it is better treatment and improved survival over surgery, however, it seems that there are still physicians out there who can not stomach the truth.

Richard D. Marks, Jr., M.D.
Trident Regional Cancer Center
9330 Medical Plaza Drive
Charleston, SC 29418-9195

Dr. Marks' letter was referred to the author. whose response follows:

The issues raised in this letter to the editor concerning the part of my article on breast cancer devoted to local-regional therapy are viable and worth discussing. The implication that the article was written to downgrade breast conservation with radiotherapy and that the author could not stomach the truth that it is a better treatment with improved survival over mastectomy is simply not true.

The article emphasized that both modified mastectomy with reconstruction, if desired, and breast conservation utilizing radiotherapy are viable alternatives for most women with Stage I and II breast cancers. The thrust was to try and define the approximately 25% of women who are not good candidates for the latter, which is seldom discussed in most lay and professional reports, and to point out that physicians have an obligation to advise their patients as to which type of therapy they believe is best suited for their individual case, rather than letting them make their own choice. However, it is the patient who must make the final choice based on adequate material so that she can make an intelligent informed consent. Certainly the patient should never be forced into either form of therapy based on physician bias. I am not biased towards either form of therapy, both of which are good procedures. Neither is appropriate to or best for every woman with breast cancer. My bias, unlike the commentator's obvious bias towards radiotherapy, is that women should be adequately informed about the advantages and disadvantages of each procedure in their individual case so that they can make a proper informed consent. There is no statistically valid evidence that indicates that breast conservation with radiotherapy is better treatment with improved survival over surgery. In fact the survival rates at ten years are statistically the same.

Radiotherapy is a time consuming procedure. Time and again outstanding authorities on radiotherapy have emphasized the importance of its being given in centers with highly skilled personnel and dedicated equipment when used with breast conservation. Perhaps radiotherapy is available within 30-40 minutes of most any female in South Carolina but the facilities are not all equal and traveling to them five days a week over a 5-6 week period can be a true hardship on those who are indigent, those who are without transportation and those with medical infirmities.

Finally the criticism about a statement attributed to the article about women's breasts being adversely affected by radiation was taken out of context. The statement was made regarding young women aged 35 or younger. The adverse effects of radiation on these women has been documented in a number of studies including women exposed to ionizing radiation from atomic bombings in Hiroshima and Nagasaki. It was the young women who developed an increased incidence of breast cancer. It is this group of women in which there are no good long-term follow-up findings on the effects on the breast of large doses of radiation.

HENRY P. LEIS, JR., M.D.
113 11th Avenue North
The Pines
North Myrtle Beach, SC 29582

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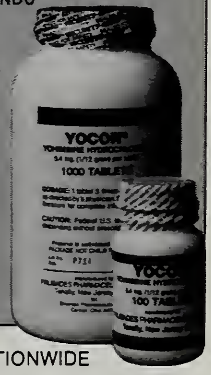
Rev. 1/85



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On the Cover:

JOHN EDWARDS HOLBROOK'S *NORTH AMERICAN HERPETOLOGY*

This month's cover is a copy of a beautiful hand colored plate from "the greatest American book on herpetology," John Edwards Holbrook's *North American Herpetology.* This edition was published in Philadelphia in 1842.

Holbrook, a founder and the first Professor of Anatomy at the Medical College of South Carolina, was born in Beaufort in 1794. His father had come to South Carolina from New England, and sent his son back north for his education. The young Holbrook received an A.B. degree from Brown and his M.D. from the University of Pennsylvania. He practiced briefly in Boston before travelling to Europe for further study. According to Louis Agassiz, one of Holbrook's closest friends and colleagues, "nothing in all his European journey had greater influence upon his future life than his stay in Paris, where he worked at the Jardin des Plantes, and became intimate with some of the leading scientific men of the day."

On his return to America in 1822, Holbrook established a practice in Charleston. Two years later, he helped found the Medical College of South Carolina, where he would devote the next thirty years of his life to the teaching of anatomy. "As a lecturer on anatomy, Dr. Holbrook probably had no superior anywhere. His knowledge of human and comparative anatomy, and his acquaintance with the laws of structure and organic development were profound, accurate and philosophical. His manner was easy and graceful, his style colloquial but never diffuse, and his powers of illustration varied, ready and apposite. A more engaging speaker we have seldom listened to."

In addition to the book cited above, Holbrook also published an important work on the *Ichthyology of South Carolina.* Agassiz said these two works answered finally the "supercilious English question, 'Who reads an American book.'"

The outbreak of the Civil War brought to an end Holbrook's scientific investigations. Although he had worked to avoid war, when it came he joined the cause and "shared the dangers of his friends . . . and as old as he was then, seventy years of age, shrank from no hardship or exposure, slept under the army wagon and shared the rations of the common soldier."

Dr. Holbrook never completely recovered from the devastation of the war during which he lost his beloved wife, Harriet Rutledge Holbrook, as well as his specimens, his library and his personal papers. He died at his sister's home in Massachusetts in 1871 and is buried in Magnolia cemetery in Charleston.

Betty Newsom
The Waring Historical Library

President's Page

PRESIDENT'S INAUGURAL ADDRESS
APRIL 27, 1991
THE ABC'S OF BEING A GOOD PHYSICIAN

Medicine and physicians are under attack. You've heard the criticisms before: the high cost of care, the 31 million Americans who are uninsured, high infant mortality, doctors who don't spend enough time with their patients . . . the accusations go on.

Is there a solution to the problems of our healthcare system? Probably, but I haven't heard one that I think will work. According to a Harris Poll, 61% of Americans would prefer the Canadian Health System. The hue and cry for a National Health Insurance System is not unexpected. It follows from the perfectly normal human desire that someone else pay the bill. We Americans want the best medical care that money can buy, and we want someone else to pay for it. I'm concerned that a National Health System would be like the PRO, Medicare, and the VA Hospitals rolled into one—it would have the compassion of the Internal Revenue Service, the efficiency of the Post Office, and prices reminiscent of the Pentagon.

Individual physicians alone cannot change the healthcare system. We depend on organized medicine to address the problem. The AMA recognizes that we must solve the two major problems of access for all Americans and the rapid escalation of costs. The AMA has developed Health Access America, a 16-point program designed to improve the weaknesses of our current system while preserving the best medical care in the world. The SCMA, under the leadership of Dan Brake during his year as President, adopted its own plan called Health Care 2000. As the AMA and SCMA struggle to improve our healthcare system, we as individual physicians must remain active. We must keep ourselves informed and educate our patients, community leaders, and elected representatives. but above all else, we must be good physicians.

Last summer while playing tennis with a colleague, we started commiserating about the many hassles facing physicians in the daily practice of medicine. He mentioned the frustration of taking ten minutes from his busy office practice to talk with some utilization review clerk about the necessity for hospitalization for a critically ill patient with a serum calcium of 13. Whether the patient has an elevated calcium level, an acute MI or needs a major operation, the encounter with the UR clerk is pretty much the same. "Why does this patient need to be in the hospital? What is your treatment plan? What tests have been done to prove the diagnosis? Is the patient on IV's? or antibiotics? or oxygen? When will she be able to go home? Well, doctor, I will check back with you in three days to see how she is doing." I responded to my colleague, "And then you have to erase that anger and frustration before you go into the next examining room as a pleasant, compassionate, and caring physician."

Tonight I am not going to concentrate on the work of organized medicine, but rather on our roles as individual physicians. Can we practice good medicine in this environment? Can we do our part as the system undergoes major changes in this decade? I think we can. This speech is my report, written not because I'm an expert, but because I needed to hear it. I needed to reassure myself that despite all the criticism of U.S. medicine, I can be a good physician.

I invite you to look with me at "The ABC's of Being a Good Physician." "A" is for *ability.* Clearly one must have and use that ability in order to be a good physician. It involves not only medical school education, residency training, and continuing medical education, but also the experience that we gain along the way. It includes knowledge, judgment, and technical expertise, but also tenacity and hard work, the willingness to spend the extra hours with a sick patient. Einstein said that genius is 1% inspiration and 99% perspiration. So it is with ability; one must have the knowledge and judgment, but also the willingness to work to apply it. Other qualities such as affability and availability may be more important for developing a successful practice, but ability is the essential quality for becoming a good physician. However, ability alone is not sufficient.

"B" is for *bedside manner,* a quality difficult to define but with which we are all familiar. It revolves around communication and rapport, compassion and empathy, listening, smiling, touching. Long after the patient has forgotten the inordinate skill you used to inflate the balloon in that narrowed coronary artery, or remove that large polyp from the colon, or manage that difficult arrhythmia or electrolyte imbalance, that patient and his family will remember your bedside manner.

Recently this point was brought home to me by an elderly lady whom I saw for the first time. She said, "I hope you have a good bedside manner. I am 75 years old, and I need my doctor to be nice to me." Every patient wants his doctor to be nice to him. We physicians owe our patients no less.

"C" is for *community*, as in community service. Jim Davis, the President of the AMA three years ago, made community service the main theme of his presidency. He talked of giving a tithe of our time, whether to our church, the Boy Scouts, or the medical clinic for indigents. Have you worked in your community enough to know the poor reputation that physicians have for charitable giving and community involvement? Perhaps if we were more involved, if we had contracts with a greater cross-section of the community, then the public would not be so quick to blame physicians for the rising cost of medical care, the problems of infant mortality and teenage pregnancy, and AIDS.

Each year we honor a colleague with The Physician Award for Community Service because we realize how important it is for physicians to serve their communities. In addition to our winner, we have here tonight many previous winners and nominees. I know I am preaching to the choir, but it is important for us to remember our obligation to our communities.

"D" is for *dignity*, for the patient as well as the physician. We probably hear dignity used most often in connection with death and dying. Certainly that is an important time to be particularly cognizant of dignity. However, the patient is entitled to dignity on all occasions: when unclothed in an examining room, when confused about numerous medications or instructions, or when checking out of the doctor's office and realizing that he does not have enough money to pay the bill.

Doctors also need to maintain their dignity and that of other physicians. None of us looks good if we choose to criticize the patient or the previous treating physician for their failures in timely diagnosis and treatment. We want respect and dignity for ourselves, and we must return it to our patients and colleagues.

"E" is for *ethics*. We've heard too much about ethics lately, with the Wall Street scandals, the savings and loan fraud, and our own Operation Lost Trust in Columbia. Before these all started, Charlie Duncan re-emphasized ethics in the medical profession as the main thrust of his SCMA presidency. South Carolina was the first state to write its own code of medical ethics, approved by the SCMA House of Delegates in 1988. Recently we have heard about erosion of integrity in our profession. Several years ago a Harvard researcher admitted that he falsified data to substantiate his research. The federal government continues to threaten us concerning the possibility of Medicare fraud, and each year several physicians are convicted. In a recent survey of medical students, 28% of them admitted to cheating in medical school. Another study determined that students with low ethical standards end up being poor physicians. What does that mean for our profession and our patients in the future? We must insist on the highest standards of ethical behavior in ourselves and our colleagues. We must maintain that same high standard as we seek solutions to the problems of our health care system.

"F" is for *fun*. Yes, it's true. We are allowed to have fun in the practice of medicine. I asked the 14-year-olds in my Sunday School class to pick the most important qualities that they wanted in a friend. First on the list was "fun." In fact everyone in the group picked fun except for me. That probably says something about me. As I reflected on it, I realized how important fun is. I am not talking simply about recreation or time off from the job, but fun in doing what you do every day, fun practicing medicine.

Did you see the article last year in *American Medical News* about what makes the practice of medicine "fun?" The author concluded that few physicians are having fun. Several physicians answered that the fun of medicine has been eroded by government and third party intrusions, malpractice, and all the other hassles. Some physicians found fun in the successful performance of a difficult operation or procedure, the nailing down of an elusive diagnosis, or simply in relationships with patients. It was apparent from that article that many physicians are very creative in the ways that they have fun. We all need to use our individual creativity in order to enjoy our work more. Fun is not only important, but probably essential, for our long-term career as good physicians.

"G" is for *goals*. Goals are important if we are to keep our careers on track and find satisfaction in our work. As we change and grow as physicians, our goals may change. Balance between our professional lives and our personal and family lives is an important consideration. One of my goals is to serve God and to maintain a close relationship with Him. I realize that no matter how good my diagnostic or technical skills, no matter how carefully or thoughtfully I perform an operation, the patient will not always get well. And yet, the patient may get well in spite of some imperfection in my care. God is the Great Healer, and I am content to be His helper. As physicians we have the opportunity to serve God by serving our fellow man. The healing physician does more than simply make diagnoses and prescribe treatment, he heals by listening, caring, and touching. We need to use that same compassion in all aspects of our lives, not just at the free medical clinic or in our private offices, but in our community service, our committee meetings, and our relationships with employees, colleagues, and patients. Sometimes I do a good job—I am working and walking with God—and at other times I don't. It's difficult to give this speech in front of family and employees, because they know how often I choose to walk by myself instead of with God. It's an opportunity and a challenge that I take seriously. Nothing would please me more than for someone to think, "There's a man who walks with God."

Two years ago one of my favorite patients died after a lengthy battle against cancer. I had operated on her four times over eight years. Each time she returned to a normal active life. Finally the cancer caught up with her. We had a special rapport, probably the epitome of a good doctor-patient relationship. I could tell when she was getting well after her operations because, like many people, she would get a bit cranky and complain jokingly about her husband, or the food, or my care. Once when I discharged her, I wrote an extra prescription, "Be Nice to your Husband." We laughed so hard that she cried, because the stitches still hurt. She took that prescription home, and her husband framed it. That was the most fun. The most touching time in our relationship happened a year later when she said to me, "God chose you to be my doctor." I think she meant that *she* had been lucky for me to be her doctor. The more I thought about it, however, the more I realized how lucky *I* had been to be her doctor. Maybe God had chosen me because of what I could learn from her. Medicine can be a ministry, for the patient *and* the doctor.

"H" is for *humor*. At the Greenville County Medical Society meeting in January, someone at our table mentioned that one of the problems with medicine is that we need more humor. We all enjoy being around friends with a good sense of humor. I suspect we enjoy our patients more if they have a good sense of humor. Long before Norman Cousins popularized the importance of humor in healing, *Reader's Digest* had a page entitled "Laughter is the Best Medicine."

Several years ago our office staff went out to lunch as part of our Christmas party. One of our long-time patients saw us, came up to the table, and said, "Enjoy yourselves. I know I am paying for this." When we got back to the office, we typed on his ledger card "Christmas lunch for staff—$64.00" and mailed it to him. He was not to be outdone and casually returned our bill with this note, "My insurance company requires documentation of medical necessity before covering this service." I cannot ever see that patient or anyone in his family without thinking about that incident and laughing inside. I encourage you to look for humor in your practice; it is a medical necessity. Laughter isn't the only medicine, but it is a very effective one.

You are probably thinking, "Enough is enough." We are not even halfway through the alphabet. I could go further and talk about integrity, judgment, knowledge. I am stopping here because I think you can do as good a job as I. You may be thinking of other qualities that are equally important—dedication, communication, humility, balance. Perhaps the main benefit is to think about these issues for yourself. What can you do to improve as a physician? Examine your strengths and weaknesses. Look at your role models, and decide what you want to learn from each of them. Think about the reasons you entered medical school. Despite all the hassles of malpractice, utilization review, Medicare, and the PRO, medicine can fulfill your expectations. It's up to you.

As I close, let me remind you that I am not ignoring the work of "organized medicine." We need a strong SCMA and AMA to work on the main issues that affect our healthcare system and our profession. The strength and standing of our profession depend not only on organized medicine, but on our qualities as individual physicians. If and when we are good physicians, our patients appreciate us and our profession. My challenge is that you strive to be a good physician, that you maintain the highest professional and ethical standards, and that you serve your community and your God.

J Chris Hawk III MD

J. Chris Hawk, III, M.D.
President

MEETING ANNOUNCEMENT

South Carolina Chapter
American Academy of Pediatrics
Annual Scientific Session

"Update in Pediatric Radiology—
New Horizons"

Faculty: Leonard E. Swischuck, M.D.,
Galveston, Texas
Roderick I. Macpherson, M.D.,
Charleston, South Carolina
Meeting Site: The Grove Park Inn,
Asheville, North Carolina
Meeting Dates: Thursday, August 1-
Sunday, August 4, 1991
Credit: Applied for AMA Category I and
PREP, 6 hours.

For more information contact: Debbie Shealy, SC Chapter AAP, P. O. Box 11188, Columbia, SC 29211, (803) 798-6207.

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PHYSICIAN RECOGNITION AWARDS

The following SCMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned.

Bryan K. Anderson, M.D.
James F. Boehner, M.D.
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Auxiliary Page

AUXILIANS LINKED TOGETHER

It is with deepest humility that I accept the privilege of serving you as president of the South Carolina Medical Association Auxiliary. I promise to do my best to carry out the goals and objectives of this organization and to build on the successes of those who have gone before me. It is with great pride that I would like to introduce to you the one who has made it possible for me to belong to the auxiliary and it is to his dedication and integrity in the practice of medicine that I dedicate this year. I would also like to recognize my home county, the Edisto Medical Auxiliary, and to thank them for the support they have given me. Orangeburg was organized in 1923 and the first annual meeting of the auxiliary was held in Orangeburg. Mrs. V. W. Brabham was elected the second state president. It was my honor to know and love Mrs. Nancy Brabham and Mrs. Elizabeth Whetsell who also served as state presidents. The Edisto Medical Auxiliary has always been an active part of the federation.

The national and state organizations are only as strong as the county auxiliaries for it is here that projects are formed and put into action and members work together to promote the health of the communities. Programs that support health education, the medical family, child and adolescent health, safety programs and screening projects give us an opportunity to make our lives count for our communities.

It is at the county level that the auxiliary becomes a strong, unified voice for medicine by supporting health careers programs, scholarships for medical and nursing students, and financial aid to medical schools through AMA/ERF.

It is also at the county level that the auxiliary participates in phone banks and voter registration drives to support legislation for the good of medicine.

That is why it is imperative that we work to maintain our strong membership and continue to recruit all physicians' spouses into the auxiliary. This can only be done at the county level.

It is also through these strong county auxiliaries that we form lasting friendships and support each other through good times and bad times.

I would like to end by reading a portion of a poem written by Eyleen Severson, Iowa, thanking her auxiliary for supporting her during a difficult time in her life.

I have a favorite necklace I like to wear,
   multi-colored with brilliant stones.
It came to me how like we are,
   linked together as auxilians,
   always adding in one more beautiful person
   to form a larger and larger circle,
Shining with the color of silver to all who see it, admire it—
   priceless in its value, irreplaceable in its design.
I'm so proud to be one link in the chain—
   a part of the total circle of auxiliary.

VIRGINIA JOHNSON (MRS. C. BIRNIE)
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President's Page

A PARTNERSHIP OF PHYSICIANS AND ORGANIZED MEDICINE

One week after the SCMA Annual Meeting, a colleague passed me in the hall and said, “It was a good meeting. I never thought I’d say it, but I’m going to join the AMA.”

I thought about the meeting, and I wondered what led this physician to decide to join the AMA after being in private practice for 15 years. The meeting was not controversial; some would even say it was dull. For the first time in recent memory, the House of Delegates adjourned early on Sunday. The CME programs and the exhibitors were good, but not likely to cause someone to join the AMA.

I thought about the speeches I had heard. Dr. John Simmons, our outgoing President, reminded us that the United States has no stated health policy, and it clearly needs one. Gerald McManis, The Leonard Douglas Memorial Speaker, predicted that our healthcare delivery system will be reconfigured during the next decade. Dr. Nancy Gary, Senior Medical Director of HCFA, asserted that society expects government and physicians to solve the healthcare problems, and that a partnership between physicians and government is essential. Dr. Jack Ring, the AMA President-Elect, informed us of recent AMA legislative successes and the current status of Health Access America. In my speech, I challenged the Delegates to remain “good physicians” while the SCMA and AMA struggle to improve our healthcare delivery system.

Had any of these speakers made such an impression on my colleague that he had decided to join the AMA? I asked him the next time I saw him, and he replied, “I’ve had so much hassle with Medicare and the PRO, I now realize that we physicians must stick together, as a family.” *We must stick together.* Is there a better reason to belong? We need the AMA and SCMA, just as these organizations need each one of us. We need a partnership!

You’re already a member of the SCMA, but are you really a partner? Is your name simply on the roll, or are you doing your part? Are you active in your county medical society, helping to solve the local problems of access for all our citizens? Are you on a SCMA committee, and do you attend the meetings? Do you read *The Journal of the SCMA* and the Legislative Update to learn about the activities of your association? Do you read *American Medical News,* so that you know what issues are being discussed in national circles and what the AMA is doing on your behalf?

I challenge you to get involved this year. One way that you can get involved is to send us your ideas. This week, before you forget about it or put it on the back burner, take five postcards and address them to the SCMA or to me. Sometime during the course of the year, drop us a card. I am not looking for compliments or for complaints, but rather for problems that need solutions. Please include your thoughts about possible solutions. We welcome your input.

If you are not an AMA member, “recruit” yourself! If your county society will get the list of nonmembers, I think you will be surprised at the number of your colleagues who have not joined the SCMA. I encourage you to tell them about your reasons for being a member and of the necessity that we all stick together as we face the next decade. Whether we are family practitioners, radiologists, surgeons or internists, we are all physicians. We must emphasize our similarities rather than our differences.

The SCMA wants and needs your active participation. Can we count on you?

J Chris Hawk III MD

J. CHRIS HAWK, III, M.D.
President

The Journal OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

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OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

VOLUME 87 JUNE 1991 NUMBER 6

TRANSPLANTATION IN SOUTH CAROLINA: MEDICAL, ETHICAL AND SOCIOECONOMIC ASPECTS

INTRODUCTION

GUEST EDITOR: ROBERT M. SADE, M.D.*

Transplantation of organs and tissues is among the most dramatic therapeutic advances in the history of medicine. The idea of removing an organ from one person and using it to replace a diseased organ in another strains the imagination. Yet, since the first successful human organ transplant in 1954, transplantation techniques have saved the lives and improved quality of life for hundreds of thousands of people. Virtually every major organ, neural tissue excepted, can now be transplanted—heart, lung, liver, kidney, pancreas—and a variety of living tissues as well—cornea, heart valves, vascular tissues, bone marrow, skin, bone, and others.

Despite these marvels, daunting problems remain. Most notable among these are rejection (a medical problem), scarce supply of many organs (an epidemiologic problem), and large expense of many organ transplant procedures (an economic problem). Kidney transplantation has been available in South Carolina for 20 years, and transplantation of nearly every other transplantable organ is now available in this state. Yet, gaps in knowledge and understanding of transplantation, both among medical professionals and the lay public, have contributed in part to the intractability of some problems related to transplantation.

To serve better the people of South Carolina, these gaps should be closed to the greatest extent possible. The purpose of this special issue of *The Journal of the South Carolina Medical Association* is to bring the physicians of South Carolina up to date in medical, ethical, economic, and epidemiologic problems related to transplantation.

This symposium is dedicated to the physicians throughout South Carolina who help care for transplant patients, and to a vision of the future in which every South Carolinian who may benefit from a new organ or tissue will find one available.

The Guest Editor and the Editorial Board of *The Journal* express their appreciation of the following organizations whose contributions permitted publication of this expanded issue on transplantation in South Carolina:

Cryolife, Incorporated
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The Guest Editor gives special thanks to his fellow members of the Ethics Committee of the South Carolina Medical Association: during the course of several discussions of ethical aspects of transplantation at the meetings of this committee, the idea for this special issue was born.

---

*Department of Surgery, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.

THE EPIDEMIOLOGY OF ORGAN TRANSPLANTATION IN SOUTH CAROLINA

CHARLES T. FITTS, M.D.*
NANCY A. KAY, B.S., C.P.T.C.**

Since 1954, when the first kidney transplant was performed, there has been a dramatic increase in the demand for organs for transplantation. Human organ transplantation has evolved from experimental therapy to an accepted, therapeutic intervention that allows patients suffering from end-stage organ failure to return to a normal, productive life. Patient survival as well as graft survival has dramatically increased over the past five years. These advances are a result of new surgical techniques, a better understanding of the immune system, the development of powerful and effective immunosuppressive drugs for the prevention and treatment of rejection, and better organ preservation techniques. Because of increased acceptance and improved outcome, the number of patients awaiting transplantation has continued to rise at an accelerated rate over the past few years. The growing demand for solid organs for transplantation has far outpaced the current availability of donated organs, creating a huge gap between supply and demand.

THE DEMAND—ORGAN TRANSPLANTATION

Kidney Transplantation

Kidney transplantation is the most frequently performed vascular transplant procedure. In 1982, there were 5,358 kidney transplants performed on a national level. As of December 31, 1989, there were approximately 16,400 recipients on active waiting lists throughout the United States. A total of 8,986 and 8,886 cadaveric and living related transplants were performed in 1988 and 1989 respectively. The distribution of cadaveric transplants (80%) relative to living donor transplants (20%) remained approximately the same for both consecutive years. Current Scientific Registry data indicate that since 1986, the number of renal transplants performed in the United States has remained relatively constant. It is estimated that approximately 58.1 people per million population could benefit from a renal transplant.[1] This would represent 14,300 potential recipients nationally and approximately 200 in South Carolina.

In South Carolina, kidney transplantation began in 1968 at the Medical University of South Carolina. From 1975 through 1980, there were approximately 230 candidates for cadaveric kidney transplantation at the Medical University. The distribution of those patients waiting was 126 (55%) males, 104 (45%) females, 101 (44%) caucasian, and 129 (56%) black. The number of transplants performed during that same time period totaled 144 consisting of 125 (87%) cadaveric and 19 (13%) living donor transplants. The distribution of those patients transplanted was 95 (66%) males, 49 (34%) females, 81 (56%) caucasian, and 63 (44%) black. The number of kidney transplants remained relatively constant from 1980 through 1984, averaging 35 procedures per year.

Between 1984 and 1990, the local patient waiting list increased approximately 120%. In December 1990, 146 patients were waiting for cadaveric transplantation. During this same period, an average of 75 transplants were performed annually. In 1990, 100 kidney transplants were performed at the Medical University, an increase of more than 200% over those patients transplanted in 1984. There were 84 cadaveric transplants and 16 living donor transplants. The distribution of those patients transplanted was 61 (61%) males, 39 (39%) females, 51 (51%) caucasian, and 49 (49%) black.

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** The South Carolina Organ Procurement Agency, 1517 Gregg Street, Columbia, SC 29201.

Over the past four years, both nationally and locally, the annual number of kidneys transplanted has remained relatively constant each year. While the number of transplants has remained constant, the number of patients in need of kidney transplantation has increased at a rate of approximately 20% annually. In South Carolina (pop. 3.4 M), there are an average of 200 patients who could benefit from such a transplant. This statewide rate of increase is quite similar to the national rate of increase.

The discrepancy between the number of patients listed for kidney transplantation and the number transplanted can be attributed to the fact that the number of available organ donors has not increased over the same time period. Thus, the number of patients on waiting lists will likely increase as this gap widens over the next several years.

Heart Transplantation

The use of the immunosuppressive drug, cyclosporine, has increased the incidence and success rate of heart transplantation; however, the number of patients on the national waiting list continues to increase even more dramatically than the number of heart transplants performed. It is estimated that approximately 58.9 people per million population could benefit from a heart transplant. Nationally, that would translate into approximately 14,500 potential recipients, and in South Carolina, nearly 200 potential recipients. In 1988 and 1989, there was a total of, respectively, 1,659 and 1,672 hearts transplanted in the United States.

The first heart transplant in South Carolina was performed on June 30, 1987. Since that date, there have been a total of 37 such procedures, averaging 12 transplants annually. The distribution of those patients transplanted was 27 (73%) males, 10 (27%) females, 25 (68%) caucasian, and 12 (32%) black. The overall patient survival of this group is 89%. The number of waiting patients listed throughout this period has been approximately 60.

While the number of heart recipients on the waiting list continues to increase at a rate of approximately 24% annually, the number of heart transplants has remained relatively constant over the past four years. This constant rate of transplantation can be attributed to the plateauing of the number of available vital organ donors over the past two years as well as the increased number (167%) of heart-lung transplants which have been performed in the past two years.[2]

Liver Transplantation

The remarkable growth in liver transplantation has been matched by equally remarkable improvements in patient morbidity and mortality following transplantation. It is estimated that 38.6 people per million population could benefit from a liver transplant, which represents approximately 9,500 potential recipients nationally and 130 potential recipients within South Carolina. In 1986, there were 924 patients who received a liver transplant in the United States. By 1989, that number had grown to 2,162 annually, an increase of 134%.

In late 1988, the Medical University of South Carolina started planning the development of a liver transplant program for South Carolina. In October 1990, the first liver transplant procedure was performed in South Carolina. Since that first transplant, six additional transplants have been performed in five patients with 100% patient survival. There were two males and three females, three caucasians and two blacks. The only retransplantation was in a white woman. The Medical University expects to perform up to 15 transplants the first year of operation to approximately 50 transplants by the third year.[3]

Pancreas Transplantation

Until recently, pancreas transplantation was viewed as a highly experimental procedure, however, recent improvements in surgical technique and patient management have increased the incidence of pancreas transplantation. In 1988, there was a total of 245 pancreas transplants performed in the United States. In 1989, the number of transplants totaled 412, an increase of 68% over the previous year.

In 1990, the Medical University of South Carolina established a pancreas transplant program. Two patients have been transplanted, both white females. Both survived the procedure and have progressed satisfactorily. Five additional patients are currently listed and are waiting for pancreas transplantation.

THE SUPPLY—CADAVERIC ORGAN DONATION

Solid organ transplantation is no longer an experimental form of therapy. These procedures now allow the majority of patients suffering from end-stage organ failure to return to improved quality of life or a normal productive existence compared to certain death for many without transplantation (e.g. liver, heart, heart/lung, and lung transplants). In 1989, there were 18,789 new candidates added to the United Network for Organ Sharing's list of candidates for vascularized organ transplants. By February 1990, 1,094 (six percent) of these newly listed patients died while waiting for a transplant. This means that at least 78 potential transplant patients die each month, nearly three people each day. As of June 4, 1990, there were 20,828 candidates waiting for transplants. Using 1989 statistics, we might assume that only about 13,000 of these candidates will be transplanted.[4]

During the past four years, there has been no significant change in the overall national cadaveric organ donor procurement rate. Most recent UNOS data show a two percent decrease in organ donors comparing 1988 (4,069) donors to 1989 (3,993) donors. This has resulted in a plateau of the cadaveric kidney transplant rate at approximately 7,000 annually. Although heart and liver transplants have increased, this is due to a higher multiple-organ recovery rate from those donors already being identified.[5]

When the Task Force on Organ Transplantation reported its findings in 1986, the total United States donor pool was estimated to be between 17,000 and 26,000 donors annually. This was based upon a review of 16 studies which estimated the potential donor pool.[6] Historically, it has been generally assumed by the transplant community, and consequently by the public and the media, that the average potential donor pool in the United States is approximately 20,000 or more annually. Thus, it has been estimated that only 15 to 20 percent of the donor pool is used each year.

The most recent estimates of the donor pool are significantly lower than previously estimated. Two recent independent statewide studies performed in Pennsylvania and Kentucky found, by death record review, a maximum potential donor pool of no more than 55 donors per million, with an average expected pool of 47-48 donors per million in both states. Using these estimates to calculate the number of potential donors from brain dead cadavers in the United States (population approximately 246 million), there may be no more than 11,600-13,600 potential donors each year. Further, if current public acceptance of organ donation continues at the same level, permission rates will remain around 60 to 65 percent. If all donors were identified and all families were approached about donation, and assuming that the donor remains medically suitable through the organ recovery, the number of potential donors that can be expected using current procurement techniques would be 7,200-9,100 annually. It is reasonably expected that two to three percent of the recoveries would be lost due to donor instability (cardiac arrest prior to recovery) bringing the donor potential down to 7,000-8,700 potential donors (approximately 29-35 donors per million).[7]

In 1989, organ donor procurement rates for all organ procurement organizations (OPOs) in the United States ranged from a low of two donors to 30 donors per million population. The average donor recovery rate for the United States was 15.6 donors per million.[8]

The South Carolina Organ Procurement Agency, Inc. (SCOPA), a federally certified organ procurement organization, is designated as the only vital organ donor program in South Carolina, excluding Aiken and Edgefield counties (pop. of 3.2 million in its designated area). SCOPA has been providing organ donor services for South Carolina since May 1984.

In 1984, only 26 organ donor procurements were performed in South Carolina. There were three extrarenal donors that year. Total organs recovered was 45.

From 1987 through 1990, SCOPA has had 159 total organ donors, averaging 40 donors annually. Extrarenal donors totaled 107 during this same period for an overall extrarenal rate of 67 percent. The donor distribution was 95 (60%) males, 64 (40%) females, 135 (85%) caucasian, 22 (14%) black, and two (1%) other. The distribution of organs was

298 kidneys, 76 hearts, 78 livers, two heart/lungs, and four pancreas.

Based on national averages and local data, organ procurement organizations are currently procuring from only a third of the maximum number of potential brain dead donors. The transplant community and especially the organ procurement organizations are well aware of the shortage of donors, and there has been an intensified effort by all of these organizations to improve the donation rate. Despite this, donations have not increased.

WHY THE SHORTAGE?

The low rate of organ donations can be attributed to many factors. Death often comes unexpectedly, leaving no time for families to discuss donation plans. Millions of Americans make no contingency plans for deaths in their families, so it is hardly surprising that families do not discuss donation or that survivors rarely initiate donation decisions.

There are data available that help describe factors affecting organ donation. Drunk driving laws, emphasis on highway safety, more proficient trauma care, and a backlash to Federally mandated laws requiring hospitals to request donations from potential donor families are some of these factors. The AIDS epidemic should also be considered, and the pro-life movement is another factor that could come into play.[9]

The donor shortage can be lessened in several ways, including relaxing the age criteria and modifying the clinical contraindication of the potential donor. Further study is needed on the potential donor pool to determine where donors are being missed at the hospital level.

Of equal importance, organ procurement organizations will need to increase their hospital development and professional education activities so that potential donors are routinely identified and the option of donation is offered to the family of every potential donor. Requesting donation is a difficult, time-consuming task that demands sensitivity and special knowledge of the donation process. Extensive training is necessary in this area to ensure that professionals are comfortable discussing donation with the family of a potential donor. This issue is discussed in more detail elsewhere in this symposium (Rudy et al.).

Public education efforts must continue in order to facilitate a broader acceptance of organ donation among all groups. The decision regarding organ donation should, ideally, be made prior to the death of an individual. Today, the major effort to educate the donation decision-maker occurs immediately after the death of a relative. A concerted national public education campaign would, at least, lay the groundwork for such sensitive discussions.

Lastly, alternative methods for organ procurement may need to be investigated, since even if all potential donors were realized, it would not be enough to keep up with the current growth of the transplant waiting list.

CONCLUSION

With the advent of new medical procedures and the increase in awareness of end-stage organ diseases, the demand for donated organs continues to mount. Presently, no more than a third to a half of the potential donor pool is being utilized, and the need for transplantable organs vastly exceeds the supply. Studies have shown that many more people would agree to donation if the need were clearly communicated and they knew how they could help. Moreover, donor identification and referral is not routinely being made at the hospital level, so many willing families are not given the option of donation.

All organ procurement organizations, as well as many hospitals and medical professionals continue to take actions to address this problem. Meanwhile, thousands of Americans suffer and die needlessly, waiting for organ transplantation. Only through education and commitment on the part of both the public and medical communities can we begin to lessen the gap between the supply and demand of organs for transplantation. □

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OBTAINING CONSENT FOR ORGAN DONATION: THE ROLE OF THE HEALTHCARE PROFESSION

LAURA A. RUDY, C.P.T.C.*
DIANE LESHMAN, R.N., B.S.N., C.P.T.C.*
NANCY A. KAY, B.S., C.P.T.C.*
OTTIS M. BALLENGER, M.D. **

Approximately 40 percent of all identified potential organ donors in the U.S. and nearly 50 percent in South Carolina will be eliminated from the donor pool each year because the donor's next of kin will refuse consent for donation. This problem is an important contributor to the tragic shortage of organs available for transplantation. Who should be responsible for presenting this option to families? What factors contribute to a successful outcome?

Background

Transplantation has rapidly evolved into effective treatment for end stage organ failure. Unfortunately, the evolution of an adequate system for organ donation has lagged far behind. The result is a staggering supply and demand imbalance. Currently, 21,330 recipients are awaiting transplant in the U.S.[1] Fifteen percent of those are awaiting heart and liver transplants; and because of the organ shortage it is estimated that one-third of these patients will die before a suitable organ becomes available.

For the last four years, there has been no increase in the number of cadaveric organ donors in the U.S. In fact, they decreased in number from 4,069 in 1988 to 3,993 in 1989. While the number of organ donors has remained stable, the number of patients awaiting transplant has increased at a rate of 27 percent per year.[2]

In an effort to increase organ donations, in 1987 the Federal government implemented a law that requires hospitals to develop procedures for the identification and referral of potential donors or risk loss of Medicare funds. Despite this and similarly structured state "required request" legislation throughout the country, organ donation levels continue to fall far short of the demand.

In order to ultimately meet the demand for vital organ donations, we must first identify, and then attempt to eliminate the barriers that currently impede progress.

Public and Professional Attitudes: Contributing factors in the organ shortage

A 1990 Gallup poll revealed that over one-half of whites and more than three-fourths of blacks stated that they were unwilling to donate their organs at the time of death. The major contributing factors to this were general distrust of the healthcare system, fears about premature death declaration and body mutilation, fear of mortality and personal or religious beliefs.

A recent survey assessing the attitudes of health care professionals in west Tennessee showed similar results. While over 90 percent of these respondents had no moral objection to donation or transplantation, only 45 percent were willing to be donors themselves. Despite the fact that the majority of respondents were aware that donation is comforting for donor families, a significant number cited concern about placing additional strain on the grieving family by approaching them about donation. They also had fears concerning their liability as a participant in the donor process.[3]

Brain Death: Healthcare professionals' knowledge and attitudes about brain death have a significant impact upon organ donation.

A recent study of 195 physicians and nurses most likely to be involved in the donor process found that only 35 percent of the respondents correctly identified the legal and medical criteria for determining brain death. Their concepts of what constituted death varied widely.[4]

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In many cases, based upon death record reviews, death of patients who appear to meet brain death criteria is not documented. In the absence of such documentation, the patient fails to meet the criteria for organ donation and a negative decision regarding donation has implicitly been made.

When brain death has been documented, families of potential donors are often approached ineffectively about their options. When told that their loved one is brain dead, families are frequently given choices to donate organs, to discontinue the ventilator, or to "leave him on the ventilator and see what happens." If a patient meets the legal criteria for death, why is prolonging supportive measures an option? This approach, while perhaps comfortable for the medical professional who deals with the grieving family, implies to the family that there is uncertainty about death.

Lack of conceptual clarity about what constitutes death is a major contributor to the problem of the organ shortage. The term "brain death" is often wrongly interpreted to mean that the patient who meets these criteria is somehow less dead than the patient whose cardiac and respiratory functions have not been maintained. Brain death is death, as discussed elsewhere in this symposium (Saunders and Bell).

In 1984, The South Carolina General Assembly passed the Uniform Determination of Death Act (R378.S330, April 18,1984), which states, "An individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions or (2) irreversible cessation of all functions of the entire brain, including the brain stem, is dead. A determination of death must be made in accordance with accepted medical standards." The determination of death by central nervous system criteria (brain death) requires that the cause of CNS failure be known and be irreversible. Thus, the presence of CNS depressant drugs, hypothermia, and electrolyte abnormalities must be excluded. There must be a complete absence of response to external stimuli, including the absence of decerebrate or decorticate posturing or motor or autonomic response to pain or other stimuli. There must be no spontaneous movement or breathing. An apnea test in which the $pC0_2$ is allowed to rise above 60 mm Hg demonstrates the failure of brain stem respiratory centers. Cranial nerve, cerebellar and other brain stem reflexes are tested, including absence of pupillary response, doll's eye movements, corneal reflexes, cough and gag response and caloric vestibular responses. Deep tendon reflexes are based on spinal cord function, so need not be absent. An electroencephalogram can be confirmatory but is not required. Two examinations several hours apart are customary. The demonstration of no central nervous system blood flow by four vessel angiography or brain scan may be helpful. When these crieria are met, the patient is dead, no matter when ventilatory and circulatory support are discontinued.

Should physicians be responsible for approaching potential donor families to offer organ donation?

As hospitals develop policies and procedures regarding organ and tissue donation, they are faced with the task of deciding which members of the healthcare team should be responsible for approaching potential donor families.

Nurses, clergy and South Carolina Organ Procurement Agency (SCOPA) coordinators tend to be successful in obtaining consent for donation, while physicians have a denial rate twice as high. Certainly, many physicians successfully discuss donation with the potential donor family, but many may lack the time required to assist the family through the proess. Perhaps they inquire about organ donation immediately after informing the family about brain death and, while their approach may be appropriate, their timing may be poor; the family may not have accepted the shock of the death pronouncement or may not have established a trusting bond with the physician.

Many physicians express concern about conflict of interest or legal liability in acting as a facilitator for donation. Most physicians who become experienced and comfortable in ensuring that the medical and legal criteria for declaration of death have been met and properly documented do not consider liability a major issue. They may, however, consider their role as a healer to be compromised when faced with asking the potential donor family about donating organs. Consequently, most physicians prefer for their part in the donation process to end with referral of the potential donor. This preference is readily accommodated by the members of the transplant team, who are on-site to carry out the management of the donor prior to organ recovery and to offer extensive family counseling services.

Some hospitals have assigned individuals who are not directly involved in the care of potential donors and their families to be "requestors." Death is declared, the physician requests referral for donation and the assigned requestor is called to talk to the family. This system has generally not proven to be successful, due to poor timing, lack of trust on the family's part and the likelihood that the requestor is personally uncomfortable in the role or negative about donation. In rare cases, families are informed by the requestor that they are required by law to ask for donation. This approach virtually always fails.

Who *should* approach these families? The individuals who have proven the most likely to obtain consent for donation are those who feel a strong personal commitment to offering this option to grieving families. They have had experience in the donation process and are also able to spend significant time with the family in order to establish a trusting relationship. Any member of the healthcare team may fit this role, but in most cases these individuals will be primary care nurses or support personnel such as hospital chaplains and procurement coordinators.

The Consent Conversation: The manner of speaking with the family, the timing of the approach and the physical setting for the conversation will affect the outcome.

Ideally, seeking consent for organ donation is a process that begins as soon as the patient is identified as a potential donor. The healthcare team constantly assesses the family's needs and provides honest, understandable explanations to the family about the patient's status, tests results and prognosis.

When death seems imminent, the option for organ donation may be brought up when the family has begun to demonstrate an ability to deal with the loss. Many of the most successful requestors refer to this process as "planting the seed."

Asking for donation with a yes or no question or demanding an immediate response puts unnecessary pressure on the family. If the requestor has an opinion about which answer is the right one, the family will sense that as well. Often, successful requestors use phrasing such as, "Have you ever discussed organ donation?" This opens the door for comforting conversation about the value of their loved one. It also invites the family to ask questions and consider this option without feeling that there is a right or wrong answer.

The environment for consent counseling should be that is quiet and, above all, private. Access to physical comforts such as tissues and coffee should be provided. If facilities are scarce, an unoccupied office is preferable to a public lounge.

In our view, a compassionate and timely approach to offering the potential donor family the option for donation is, by its very nature, beneficial. The family may decline that option, but if they have been adequately informed, honestly apprised of their loved one's condition and given the opportunity to make choices based upon their own and their loved one's wishes and values, then they have been afforded an excellent level of care.

The Team Approach: The value of incorporating multiple disciplines into the process.

Ideally, the approach to the family is an ongoing process with the participation of the entire healthcare team. The physician will identify the potential donor and request referral to the procurement agency. Additionally, the physician will communicate openly and honestly with the family about the patient's terminal status and adequately explain brain death. The nurses involved in the patient's care will spend time with the family, attend to their physical and emotional needs, reinforce the physician's discussions and assist the family with understanding the patient's condition.

Perhaps hospital clergy or social workers will spend time talking quietly with the family and helping them with their spiritual and emotional needs. These individuals can also provide valuable support to the staff and help the team members to deal effectively with the family's grief, as well as their own feelings of loss.

The organ procurement coordinator will evaluate the patient and review the chart to determine the patient's status as a candidate for donation. The coordinator will be available to suggest interventions that are not contraindicated (based upon brain death status) to preserve organ function, assist the nursing staff with care of the deceased, counsel the family, obtain an extensive social history from the family, and arrange for organ recovery teams.

The Impact of Early Referral: Early identification and referral of the potential donor contributes to a successful outcome. While some medical professionals feel it is inappropriate to include the procurement coordinator in the donor process prior to the declaration of death, our experience clearly demonstrates that the most successful donor hospitals contact the coordinator at the time the *potential* donor is identified.

Early referral will allow ample time for the coordinator to assess the potential donor and insure that the patient is indeed a candidate for donation. We have often been called to counsel donor families, only to arrive at the hospital, conduct an on-site evaluation of the potential donor and determine that the patient is not a suitable candidate. This is often very disappointing to those families who have found the option comforting.

The process of managing the potential organ donor has become more complex and time consuming with the advent of multi-organ retrieval. It is very helpful for the medical, nursing and procurement agency staff to establish an open communication as early as possible. At no time prior to declaration of death are interventions suggested that are contrary to sustaining life, yet appropriate interventions taken early can be the determining factor in maintaining adequate organ function for donation. All too often, the terminal, no-code patient, referred after the declaration of death, has organs rendered unusable due to prolonged, untreated hypotension and shock. Early referral may have permitted interventions to maintain organ viability.

Another major advantage to early identification and referral is the opportunity it affords the organ procurement coordinator to assess the donor family's needs and assist the staff in determining the proper timing and approach to the family. Sometimes families will request to speak to a coordinator prior to the declaration of death. The procurement agency will provide this counseling upon the attending physician's request.[5]

Conclusion

Our regional experience demonstrates that healthcare professionals who have had positive experience with donation and have received adequate education about the process are more personally committed to offering this option to potential donor families. The key to significantly increasing the number of organ donors lies in increasing the level of education and awareness about brain death and organ donation in the public and professional communities.

Educating and training healthcare professionals and the lay public about organ donation is an on-going and lengthy process. It is complicated by the lack of effective death education within these communities. In the meantime, at least because of the law and hopefully because of personal commitment, medical professionals will be called upon to offer the option for organ donation to grieving families. The manner in which this is done is the most significant factor in determining the outcome. □

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MEDICAL ASPECTS OF TRANSPLANTATION*

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The transplantation of solid organs and tissues, once considered a "medical miracle," has now become commonplace. Constantly improving results have made transplantation standard therapy for many patients with end-stage organ failure. Unfortunately, the need for transplantable organs far exceeds the current supply. Of the 85,000 Americans requiring chronic hemodialysis, almost half would likely benefit from renal transplantation, but fewer than 10 percent receive cadaver organs each year.[1] As of November 1, 1990, the national waiting list for kidney transplantation stood at 17,803. Of these, 3,000 have been waiting over three years. In the United States, 1989 saw over 2,000 hearts and 2,000 livers transplanted. Yet, increasing waiting lists for extrarenal transplants have reached 1,785 for heart and 1,171 for liver transplantation. One-third of those awaiting cardiac transplants die untransplanted. The donor shortage affects pancreas and lung transplantation similarly.

Because a detailed review of all the medical aspects of transplantation is beyond the scope of this symposium, this article will be limited to brief discussions of the immunosuppressive protocols generally in use, the indications, recipient selection criteria and results for the commonly transplanted solid organs, the complications common to all transplant patients, the multispecialty applications of tissue transplantation, and the identification and management of the multiple organ donor. Since bone marrow transplantation does not involve cadaver organ or tissue donation, it will not be discussed in this review.

IMMUNOSUPPRESSION

The central problem of all transplantation is control of the immune response. This usually involves the host response to the transplanted organ, but occasionally passenger lymphocytes from the donor may attack the host (graft-versus-host disease). Immunosuppressive therapy requires prevention of the immune destruction of the graft without significantly limiting the recipient's ability to respond to invasion of micro-organisms and the development of neoplasia. Although various procedures such as total lymphoid irradiation, thoracic duct drainage, donor specific transfusion, and splenectomy have been used to a limited extent, the majority of current immunosuppression is pharmacologic. Ideally, a single dose of an immunosuppressive agent could induce a state of permanent and specific tolerance in the host to the graft tissue leaving other host defenses unaffected. To date this has only been achieved in a few highly specific laboratory animal models. Clinical immunosuppression, therefore, involves the chronic use of powerful and, unfortunately, rather nonspecific medications in carefully controlled doses regulated to achieve therapeutic goals without unacceptable toxicity.

The initial immune response to a transplanted organ begins when circulating T lymphocytes (T-cells) distinguish cell surface antigens on the graft that do not belong to the host. These lymphocytes then stimulate macrophages and other lymphocytes to secrete lymphokines including interleukin 1 and 2 which cause the activation and proliferation of suppressor/cytotoxic and helper T cells which in turn attack the graft.

Prophylactic immunosuppression begins with an induction phase in which large doses of potent agents are given perioperatively. A maintenance phase then seeks to control the afferent arm of the immune response with tapering doses as allowed by the reduced tendency of rejection to occur with time (engraftment). Treatment of established rejection requires large doses of agents that control the effector arm of the immune response. Modern immunosuppressive therapy consists of multiple drugs used in combination in an attempt to maintain the graft without unacceptable toxicity from large doses of a single agent.

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Cyclosporin A (CSA). This 11 amino acid, lipophilic, cyclic polypeptide was isolated in 1975 and forms the backbone of most current protocols. It appears to act in the cytoplasm to inhibit the transcription of mRNA for various lymphokines, including interleukin 2, and the enzymes required for cytotoxicity. CSA acts primarily in helper T cells via the inhibition of interleukin 2 synthesis. Activation and thus proliferation of helper and cytotoxic T cells is impaired. In addition, there may be direct interface with cytotoxic T cells preventing their maturation. The suppressor T cells, which moderate rather than accelerate the cellular immune response, are largely unaffected.[2]

CSA can be administered orally as liquid or capsules or intravenously in an emulsion. Bioavailability and metabolism vary widely among individuals and are affected by a wide variety of medications. Because of its toxic potential and narrow therapeutic ratio, dosage is regulated according to whole blood levels obtained regularly. CSA is metabolized in the liver via the P-450 microsomal enzyme pathway. Thus, other medications affecting this system will cause increases or decreases in CSA levels. Typical examples of drugs which increase levels are ketoconazole, diltiazem, verapamil, corticosteroids, and erythromycin. Phenytoin, phenobarbital, nafcillin, rifampin, and valproic acid decrease levels.

CSA toxicity is expressed in many organ systems. Nephrotoxicity is the predominant and most common dose-limiting side effect. Acute toxicity is due largely to renal arteriolar vasoconstriction and results in oliguria and decreased creatinine clearance. This is a particular problem in the transplanted kidney which may already have undergone some ischemic damage. Intermediate-term nephrotoxicity results in gradually rising serum creatinine that may be difficult to distinguish from kidney rejection. In addition, hyperkalemia and hyperuricemia may become manifest. Late nephrotoxicity is associated with interstitial fibrosis and tubular atrophy. The common mechanism is thought to be CSA inhibition of prostacyclin production and enhancement of thromboxane A2 production leading to vasospasm and chronic ischemia. Hypertension is a common late result. Indeed, up to 80 percent of heart transplant recipients require antihypertensive therapy.

Other side effects of CSA include hepatotoxicity, hirsutism, gynecomastia, and gingival hypertrophy. CSA neurotoxicity may be particularly troublesome with paraesthesia, tremor, seizures, sleep disturbances, and depression.

Azathioprine (AZA). Azathioprine was first synthesized in the 1950s as a slow-release form of 6-mercaptopurine and was found to be better tolerated. It was rapidly introduced into clinical transplantation and is still in use combined with CSA and prednisone in lower dosages as "triple therapy." AZA inhibits purine synthesis and is a stronger inhibitor in T than in B lymphocytes. AZA can be administered orally or intravenously, where it is somewhat more potent. The metabolism of AZA involves xanthine oxidase so allopurinol, a xanthine oxidase inhibitor, must be used with extreme caution in patients on AZA and requires marked reduction in AZA dosage.[3]

AZA induced myelosuppression is the most common side effect. Dosage is usually regulated to keep the white blood count between 4,000 and 6,000. AZA has also been associated with pancreatitis and hepatic toxicity manifested by transaminase and bilirubin elevations.

Corticosteroids. Corticosteroids were initially used to treat rejection in the early 1960s and were introduced as maintenance immunosuppression by Starzl in 1963. Prednisone, prednisolone and methylprednisolone are the corticosteroids most commonly employed in transplantation. Steroids are thought to act in the nucleus of the cell to affect virtually all parts of the immune system. Steroids primarily act on macrophases to prevent the formation of interleukin 1 and thereby suppress the further stimulation of lymphokine production. Steroids may possess other anti-inflammatory actions as well.[3]

Corticosteroids can produce many serious side effects. Early effects include mood swings, increased appetite, and weight gain. Mineralocorticoid effects produce hypertension, hypernatremia and hypokalemia. Glucocorticoid effects may exacerbate or precipitate type II diabetes. Acid-peptic symptoms are common although frank ulceration is not. Additional late side effects include acne, osteoporosis, hirsutism, growth retardation, glaucoma, steroid myopathy, moon faces, increased tissue fragility, poor wound healing, and cataracts.

Induction immunosuppression involves high dose steroids (1-2 mg/kg prednisone) with a gradually tapering dose schedule. Although complete weaning from corticosteroids would be desirable, it is not often achievable. Corticosteroids are usually the first line treatment for acute rejection in most immunosuppressive protocols.

Antilymphocyte globulins. Polyclonal antilymphocyte preparations were introduced into clinical transplantation by Starzl in 1967. Cultured lymphocytes or thymocytes are used to immunize laboratory animals. Rabbits, horses and goats have been used for clinical preparations. Unwanted antibodies are removed from the harvested antisera by adsorption. The resulting IgG is then purified. The intravenous (horse and goat) and intramuscular (rabbit) routes are used for daily, short-term administration.

Antilymphocyte globulins have been used for induction therapy and in the treatment of steroid-resistant rejection. Administration results in the rapid clearance of T cells from the circulation. Side effects include fever and chills from the rapid lymphocytolysis observed in the first few injections. Because of cross-species sensitization, serum sickness has been observed. In addition, phlebitis and sterile abscesses may occur.[3]

Monoclonal antibodies. OKT3 represents a second generation antilymphocyte preparation made possible by hybridoma techniques using mouse splenocytes stimulated with human T cell surface antigens and human myeloma cells. Cell separation results in the production of monoclonal antibodies targeting each of the individual antigens used to sensitize the mouse. OKT3 is directed against the CD3 surface molecule on T lymphocytes, which is intimately associated with the T cell's antigen receptor. The OKT3 antibody may act by at least two mechanisms. First, the antibody may bind to the T cell, causing complement fixation with subsequent T cell lysis and clearance from the circulation. Second, the antibody may cause the CD3-antigen recognition site complex to become blocked or internalized rendering the T cells immunologically incompetent.

OKT3 is administered in 5 mg doses by rapid IV push. Because OKT3 initially causes T cell stimulation with a massive release of lymphokines (chiefly interleukin 1 and 6) and tumor necrosis factor, premedications to prevent arthralgias, myalgias, chills and fever are given for the first few doses. A more troublesome side effect has been noncardiogenic pulmonary edema in volume-expanded patients. This may require diuresis or hemodialysis before administration. Neurologic side effects including headache, seizures and aseptic meningitis have also been reported. OKT3 has been used as induction immunosuppression as well as to treat steroid-resistant rejection. As with the polyclonal antilymphocyte globulins, cross-species sensitization may prevent reuse of the agent.

New agents. Promising new immunosuppressive agents are being developed with some already in clinical trials. These include the macrolides *FK-506*, being used in liver and heart transplantation at the University of Pittsburgh and now in other centers; and *rapamycin*, which is extremely potent and is able to induce permanent tolerance in some laboratory animals. FK-506 is 100 times more potent than CSA and acts by a similar mechanism except that it does not share CSA's advantage of sparing supressor T cell function. In contrast, rapamycin acts synergistically with CSA as a strong inhibitor of T cell function. The derivative of the antipsoriatic drug mycophenolic acid, *RS-61443*, is an antipurine with actions similar to AZA, inhibiting T and B lymphocyte DNA synthesis resulting in decreased antibody production as well as cytotoxic T cell down-regulation.

Clinical trials in heart and kidney transplants are underway. *Deoxyspergualin* is a polyamine derivative with its effect late in T lymphocyte maturation which suppresses primarily the effector arm of the immune system. This drug shows promise in allowing xenotransplantation in animal models. Finally, new monoclonal antibodies are under development which may add to or improve upon the actions of OKT-3. These new agents acting at various sites in the immune sequence may allow the immunosuppressive therapy of the future to be tailored to the individual needs of the patient.

COMPLICATIONS OF LONG-TERM IMMUNOSUPPRESSION

The problems of long-term immunosuppression are common to all transplant recipients and are the results of the nonselective nature of current immunosuppressive medications. Opportunistic infection and malignancy are the most important. Predisposing factors for infection include diabetes mellitus, hepatitis, leukopenia, uremia and repeated rejection episodes. From the following extensive list of unusual infections in the immunocompetent patient, it is apparent that frequent cultures, x-ray studies, and invasive measures such as routine bronchoscopy are important for early diagnosis and treatment in the transplant patient who may be at first minimally symptomatic. These complications are quite similar to those encountered in the treatment of patients with acquired immunodeficiency syndrome (AIDS). An excellent review of this subject can be found in a recent issue of *The Journal of the South Carolina Medical Association.*[4]

Bacterial infections. The more common bacterial infections include urinary tract infections, wound infections, and pneumonias and tend to occur more often during the early post-transplant period. Sternal wound infections in cardiac transplant patients are usually due to staphylococci or gram negative rods. Intra-abdominal sepsis presents a difficult problem in the transplant patient and may result from perforated viscera from underlying peptic ulceration, diverticulitis, calculous or acalculous biliary disease, or cytomegalovirus enterocolitis. This problem is particularly treacherous since corticosteroids may mask the usual abdominal signs and symptoms, and secondary bacterial peritonitis is a highly morbid event in any immunosuppressed patient. A high index of suspicion and vigorous diagnostic evaluation is necessary in these patients.

Bacterial pneumonias occur with increased frequency during the first few months after transplantation and are usually caused by gram negative rods. In our experience, rapidly progressive symptoms may quickly lead to septic shock. *Legionella pneumophilia* infections also occur with increased frequency after transplantation. The diagnosis may be difficult in these patients who present with nonproductive cough, fever and dyspnea. Because the organism is very difficult to grow in culture, direct immunofluorescent techniques are used to detect the legionella antigens from sputum or bronchoalveolar lavage specimens. The organism tends to remain within the alveoli so deep lavage specimens are more likely to be diagnostic. Serologic tests are also available and should be obtained if the diagnosis is suspected and other tests are negative. A four-fold rise in titer is considered diagnostic. This organism has also been responsible for culture-negative sternal wound dehiscence.

Three other bacterial pathogens bear mention because of their incidence in patients with deficient cell-mediated immunity. *Lysteria monocytogenes* causes meningitis and cerebritis with a high mortality. Transplant patients with persistent headache or other unexplainable neurologic symptoms should be evaluated with lumbar puncture. *Nocardia asteroides* may cause multisystem infection including skin, lung, eye, and joint disease. Finally, *mycobacteria* can have a wide variety of presentations in immunosuppressed patients. The routine use of trimethoprim-sulfamethoxazole as prophylaxis has tended to reduce the incidence of some bacterial and other infections including *pneumocystis carinii.*

Fungal infections. As immunosuppressive protocols have improved however, and with the introduction of CSA, the pattern of infections has tended to shift towards viral and fungal agents. Fungal infections tend to occur in concert with bacterial infections during periods of marked immunosuppression and as isolated infectious agents during maintenance therapy. *Aspergillus fumigatus* and *flavus* can cause upper and lower respiratory, soft tissue, and CNS infections as well as endocarditis in immunocompromised hosts. Diffuse pneumonia most commonly occurs following exposure to a large inhaled inoculum such as with exposure to dust from a construction site. Combined therapy with resection for localized disease and amphotericin B is most effective. *Candida* infections are also frequently encountered and most patients are kept on prophylactic therapy with nystatin or miconazole. Invasive infection may be difficult to diagnose and may involve several sites including the eye simultaneously. Pulmonary or central nervous system infections with *cryptococcus neoformans* also occur. The topic of systemic fungal infections has recently been clearly and extensively reviewed.[5]

Viral infections. Infections with herpes viruses are also common. *Cytomegalovirus* (CMV) may infect the lung, eye, central nervous system, liver, heart, pancreas and other tissues with adverse effects on patient as well as graft survival. Infection covers an entire spectrum from asymptomatic seroconversion to hypoxemia, hypotension and multiple system organ failure. Primary infection (usually in the setting of transplantation of an organ or transfusion of blood from a seropositive donor into a seronegative recipient), reactivation, or superinfection may all occur. Effective prophylaxis with ganciclovir or high dose acyclovir with or without hyperimmune globulin is available but is expensive and is usually reserved for seronegative recipients of seropositive donors. Therapy of severe infections with ganciclovir is effective in most cases. *Herpes simplex* and *zoste*r infections are also more common in transplant recipients and are treated with acyclovir.

Parasitic infections. Opportunistic parasitic infections include *pneumocystis carinii* and *toxoplasma gondii*. Dry cough, fever, and hypoxemia with interstitial pulmonary infiltrates are the presenting signs of pneumocystis infections. These are much less common than in the past because of routine prophylaxis with trimethoprim-sulfamethoxazole. Toxoplasmosis may present as a mononucleosis-like syndrome which frequently becomes lethal with necrotizing encephalitis, myocarditis, ·and pneumonia. It is extremely difficult to diagnose. Pyrimethamine, sulfadiazine, and spiramycin are effective treatment but must be continued for several months.

Malignancy. Malignancy also occurs with increased frequency in transplant recipients because of reduced immune tumor surveillance mechanisms and immunosuppressive drugs with potent mutagenic effects. Skin tumors are most common necessitating the routine use of sunscreens. Visceral tumors also seem to be more frequent. Lymphomas occur more commonly in transplant patients with *Epstein-Barr* virus (EBV) infection. EBV seems first to cause polyclonal and later monoclonal B cell proliferation which progresses to a lymphoproliferative disorder (LPD) and later to a full-fledged lymphoma. Surgical resection of the tumor, acyclovir therapy, and reduction in immunosuppression are the most effective therapy for this aggressive process.

SOLID ORGAN TRANSPLANTATION

The preceding discussion of immunosuppression and the complications common to all transplant recipients suggests that there are several requirements for success in any transplant venture. Because immunosuppression produces altered host defenses, the presence of pre-existing infections or conditions likely to result in severe infection generally eliminates such patients from consideration. The same is true of uncontrolled malignancy. The chronic use of steroids makes active peptic ulcer disease a relative disqualifier unless control can be rapidly achieved with medical therapy. Because the long-term results of transplantation bear directly on the patient's compliance with rigorous medication and follow-up regimens, it is desirable that the transplant candidate be fully aware of the risks and benefits of transplantation, have a stable psychological makeup, and supportive family situation or the equivalent. General transplant candidacy guidelines and the contraindications for specific solid organ transplants are listed in Table I.

Kidney. Although current techniques allow patients with end-stage renal disease to

TABLE I
RECIPIENT: SELECTION CRITERIA

General

End-stage organ failure unresponsive to conventional medical or surgical therapy.
Normal function or reversible dysfunction of other major organ systems.
Absence of uncontrolled infection or malignancy.*
Absence of active peptic ulcer, diverticular, or gall bladder disease.
Absence of recent pulmonary infarcts or undiagnosed pulmonary nodules.
Ability to understand and comply with post-transplant medication and follow-up regimens .

Contraindications for Kidney Transplantation

Uncorrectable or unusable lower urinary tract.
Chronic congestive heart failure or inoperable, severe coronary or other heart disease .
Aortoiliac occlusive disease.
"Physiologic" age over 65 years.
Chronic severe pulmonary disease.
Kidney failure caused by disease with high recurrence rate in the graft such as oxaluria, scleroderma, focal segmental glomerulonephritis, mesangiocapillary glomerulonephritis, or Henoch-Schoenlein purpura.

Contraindications for Liver Transplantation

Expected survival greater than 12 months.
Extrahepatic malignancy.

Contraindications for Heart Transplantation

Absolute
End-stage congestive heart failure responsive to conventional medical or surgical therapy.
Pulmonary vascular resistance index greater than 6 Wood units; transpulmonary blood pressure gradient greater than 15 mm Hg.
Severe peripheral or cerebrovascular disease.

Relative
Age greater than 65 years.
Type I or complicated type II diabetes mellitus.
History of malignant hypertension with end-organ damage, or hypertension requiring high-dose multi-drug therapy for control.
Questionable psychological makeup or inadequate family support.
Poor nutritional status.

Contraindications for Lung and Heart-lung Transplantation

Expected survival of greater than 12-18 months.
Poor size match between donor and recipient.
Previous extensive intrathoracic surgery.
Ventilator dependence or tracheostomy.
Continuing chronic steroid requirement.
Poor nutritional and physical conditioning status.

Contraindications for Pancreas Transplantation

Complete HLA-DR mismatch.
Age over 40 years.
Diabetic retinopathy resulting in blindness.
Bilateral lower extremity amputations.
Severe coronary artery disease.

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*Hepatitis or certain intrahepatic malignancies do not exclude liver transplantation .

TABLE II
CADAVER DONORS: EXCLUSION CRITERIA

General

Absolute
Inadequately treated or untreated hypertension.
Malignancy, except primary central nervous system tumors.
Systemic viral, bacterial, or fungal infections.
Hepatitis B[*] or C[*] or human immunodeficiency virus carrier state.
Collagen vascular diseases such as systemic lupus erythematosus.
Congenital or acquired metabolic disorders.
Hemoglobinopathies such as sickle cell anemia.

Relative
Extensive cardiopulmonary resuscitation or prolonged hypotension.
Diabetes mellitus.
"Physiologic" age over 70 years.
Extensive burn injury.
Recent gastrointestinal surgery.

Contraindications for Kidney Donation
Past history or clinical evidence of renal disease.
Abnormal urinalysis (excluding minor effects of the acute terminal illness).
Abnormal serum urea nitrogen or creatinine levels (except terminal elevations).
Urine output less than 0.5 ml/kg/hr.

NOTE: Catheter-related lower urinary tract infections do not necessarily exclude kidney donation.

Contraindications for Liver Donation
Past history or clinical evidence of liver disease.
Deteriorating liver function tests (AST, ALT, ALP, PT, TB).[†]
Fatty infiltration of the liver.
Peritonitis.

Contraindications for Heart Donation
History of cardiac disease.
Prolonged requirement for pressor or inotropic support. (Except for vasopressin, low dose dopamine, and thyroxine replacement)
Age greater than 35 for men or 40 for women. (Older ages acceptable if nonsmoker and normal coronary angiogram)
Abnormal cardiac findings on chest x-ray or physical examination.
Abnormal EKG or echocardiogram.
ABO blood group incompatibility with proposed recipient.
Donor size inappropriate for proposed recipient.

Contraindications for Lung and Heart-lung Donation
Exclusion criteria for heart donation.
History of chronic lung disease, tuberculosis, or asbestos exposure.
History of pulmonary embolism.
Undiagnosed pulmonary nodule or infiltrate.
Clinical or x-ray evidence of pneumonia.
Abnormal bronchoscopy including lavage gram stain.
Prolonged ventilation at high oxygen concentrations.
Excessive alveolar-arterial oxygen gradient.
Donor size inappropriate for proposed recipient.

Contraindications for Pancreas Donation
History of diabetes mellitus.
History of pancreatic disease or chronic alcoholism.
Previous pancreatic, duodenal, or splenic surgery or trauma.
"Physiologic" age older than 60 years.
Abnormal serum amylase or lipase levels.
Hepatitis B or C.

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[*] Do not exclude liver donation.

[†] AST (SGOT) = aspartate amino transferase; ALT (SGPT) = alanine amino transferase; ALP = alkaline phosphatase; PT = prothrombin time; TB = total bilirubin.

be successfully managed with either hemodialysis or kidney transplantation, survival rates, quality of life, and health care costs[6] all strongly favor transplantation. Improved surgical and intensive care techniques allow transplant candidacy to extend from infancy to old age. The more common indications for transplantation in the adult are chronic glomerulonephritis, chronic pyelonephritis, and diabetic nephropathy. Hypertension, especially in blacks, is a significant cause of renal failure requiring dialysis. In infants and children, congenital diseases are common causes of renal failure which require careful evaluation and correction of both structural and metabolic abnormalities before consideration for transplantation.[7] Relative contraindications to kidney transplantation are listed in Table I.

The great demand for and relative shortage of donor kidneys, the ability to electively schedule cases, the reduced cold ischemic time of organ preservation, and the superior results of HLA identical and living-related donor transplantation have led to a preference in some centers for the use of a living related donor when available. Although preservation techniques now in use for cadaver organs allow up to 72 hours of cold storage, every attempt should be made to minimize delays to under 24 hours to reduce the likelihood of delayed graft function. To assure fair and equitable distribution of cadaver organs, the United Network for Organ Sharing (UNOS) has developed a federally mandated, nationwide system for allocation of kidneys to patients with negative crossmatches and the highest number of points. This point system is based on the desirability of finding and sharing six antigen-matched kidneys, restricting the use of blood group "O" kidneys to blood group "O" recipients since they cannot receive organs of other blood types, and using kidneys from pediatric donors in pediatric recipients. Points are assigned for HLA antigen matching with the donor, the presence of preformed antibody (sensitization to certain HLA types), time on the waiting list, and medical urgency.

Current MUSC immunosuppressive protocols vary according to the clinical status of the recipient. Recipients receiving grafts from living related or HLA identical donors are treated with preoperative CSA and AZA, intraoperative methylprednisolone, and postoperative triple therapy. Patients without major risk factors receiving cadaver kidneys are given preoperative AZA, intraoperative methylprednisolone, and postoperative triple therapy (CSA, AZA, and prednisone) if there is prompt graft function. When there is delayed graft function and in high-risk patients, early postoperative CSA is delayed to eliminate the possibility of nephrotoxicity. OKT3 is substituted until graft function returns. Thereafter, triple therapy is given for maintenance.

As an example of the long-term results of kidney transplantation, the University of Minnesota data, including over 3,000 patients transplanted since 1963, are presented in Figures 1 and 2.[8] With the advent of CSA immunosuppression, diabetes mellitus (once considered a contraindication to kidney transplantation) has clearly been shown to allow equivalent graft survival to that of nondiabetic recipients and only slightly decreased patient survival. These results are particularly encouraging when compared to the survival rates on hemodialysis from Medicare's end-stage renal disease program. In marked contrast to the one and two year survivals of 90 percent and 83 percent for nondiabetics aged 25-55, only 80 percent of diabetics survived one year and 60 percent were alive after two years on chronic hemodialysis.

Liver. Since the initial human orthotopic liver transplant performed in 1963 by Starzl, then at the University of Colorado, the field of liver transplantation has steadily expanded. Since 1983 when CSA came into general use, the number of liver transplant centers in the United States and the world has increased rapidly. In 1989, there were over 80 UNOS approved liver transplant centers in the United States and 2,191 liver transplants were performed in this country.

Recipient criteria for human liver transplantation are relatively simple. Candidates include those patients with end-stage liver disease who have exhausted all appropriate medical therapy and whose projected survival without transplantation is likely to be less than one year. Generally accepted indications

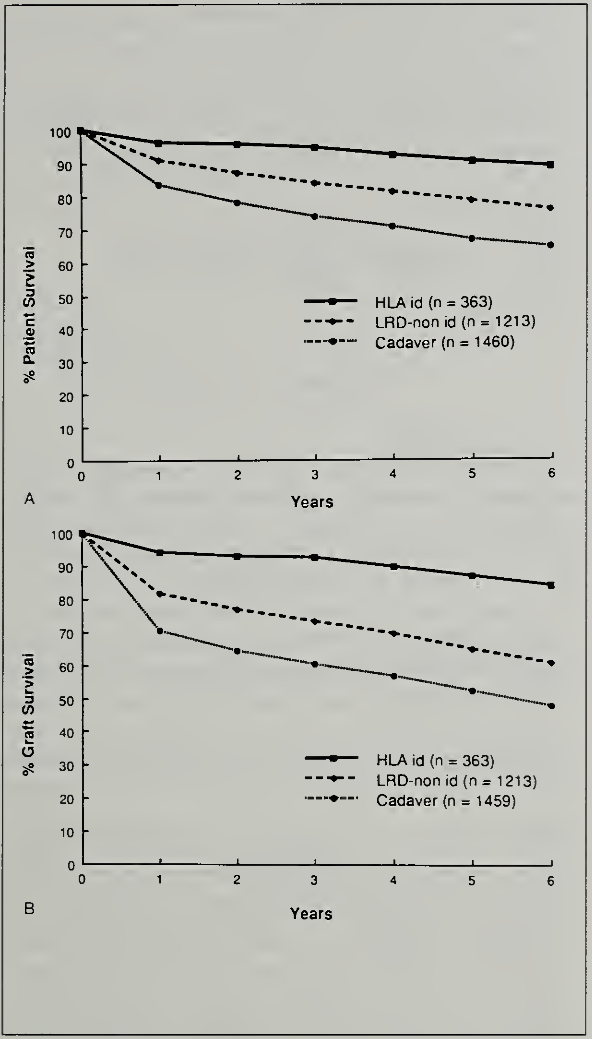

FIGURE 1: A, Actuarial patient and B, graft survival rates for transplants between 1963 and 1990 at the University of Minnesota grouped according to donor source—human leukocyte antigen (HLA)-identical sibling (363 cases), living related (LRD) nonidentical (1,213 cases), and cadaver (1,460 cases). Reprinted with permission from Frey, D.J., et.al.: Renal transplantation. In Gruber, S.A. and Cerra, F.B. (editors): Critical Care Clinics. Critical Care of the Transplant Patient. Vol. 6, No. 4. Philadelphia, W.B. Saunders Company, 1990, pp 899-910.

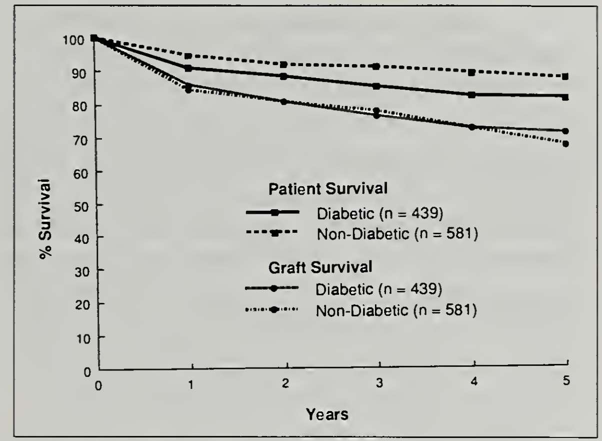

FIGURE 2: Patient and graft survival rates for cyclosporine-treated diabetic versus nondiabetic patients. Patient survival rate for diabetics is lower but not statistically different. Graft survival rate is equal in both groups. Reprinted with permission from Frey, D.J., et.al.: Renal transplantation. In Gruber, S.A. and Cerra, F.B. (editors): Critical Care Clinics. Critical Care of the Transplant Patient. Vol. 6, No. 4. Philadelphia, W.B. Saunders Company, 1990, pp 899-910.

for transplantation in acute and chronic liver failure are listed in Table III.

Operative blood loss, initially a daunting problem in patients with extensive portasystemic collateral circulation, is now routinely less than 10 units. Immediate graft function is the rule since the University of Wisconsin (UW) solution has been used for organ preservation.[9] UW solution has also provided the immeasurable benefit of a superior allograft which tolerates a longer cold ischemia time than was possible with previous storage solutions offering tremendous logistical advantages to the operating teams. All of these advances have led to patient survival rates at one year of greater than 70 percent in large series and as good as 90 percent in selected groups of patients.[9]

Heart. After the first successful human heart transplant in 1967 and a period of

TABLE III
SPECIFIC INDICATIONS FOR LIVER TRANSPLANTATION

Chronic liver disease

1. Primary biliary cirrhosis.
2. Primary sclerosing cholangitis.
3. Postnecrotic (cryptogenic) cirrhosis.
4. Alcoholic cirrhosis.
5. Alpha 1 antitrypsin deficiency.
6. Primary hemochromatosis.
7. Hepatitis B chronic hepatitis or cirrhosis.
8. Non A non B chronic hepatitis or cirrhosis.
9. Secondary biliary cirrhosis.
10. Chronic active (lupoid) hepatitis or cirrhosis.
11. Budd-Chiari syndrome.
12. Biliary atresia.
13. Certain malignant tumors confined to the liver.

Acute fulminant liver failure

1. Acute fulminant viral hepatitis (A, B, or C).
2. Acute fulminant Wilson's disease.
3. Acetaminophen poisoning.
4. Mushroom poisoning.

slowly improving results, the introduction of CSA in 1980 led to a period of rapid and continued growth. More than 85 percent of the world's 12,600 heart transplants have been performed since 1985. The number of heart transplant centers has grown from only 17 in 1980, to 100 by 1985, and to 236 (148 in the United States) last year.[10] The rapid increase in infant heart transplantation for congenital defects such as hypoplastic left heart syndrome as pioneered by Bailey at Loma Linda University makes up much of this growth.

The recipient selection criteria used at MUSC are listed in Table I. The guiding principle is that the transplant candidate should have uncorrectable end-stage heart disease and no other major survival-limiting problems. In the adult population, about half of the patients have idiopathic cardiomyopathy with most of the rest suffering from ischemic disease. Among children, the distribution is about half cardiomyopathic and half congenital heart disease. The results of medical therapy for chronic congestive heart failure are improving which allows patients to survive the often prolonged waiting period for a donor. Nevertheless, for patients with left ventricular ejection fractions between 11 and 20 percent, the one-year survival is only about 60 percent, and for those with ejection fractions of 10 percent or less, survival beyond six months is unusual. (Figure 3).[11] It is against these survival data that the results of heart transplantation must be compared. They can also serve as a practical guide to the appropriate timing of referral to the heart transplant center.

A "noninduction" immunosuppression protocol consisting of low-dose CSA, AZA and prednisone has been used in all patients. Rejection episodes are treated with pulse doses of methylprednisolone or one of the antilymphocyte globulins if steroid resistant. Although there are several immunosuppressive protocols in current use, most are based on these three agents. In addition to triple therapy, OKT3 may be added to the immediate post-transplant regimen as "induction" immunosuppression, although this has not been shown to improve survival.

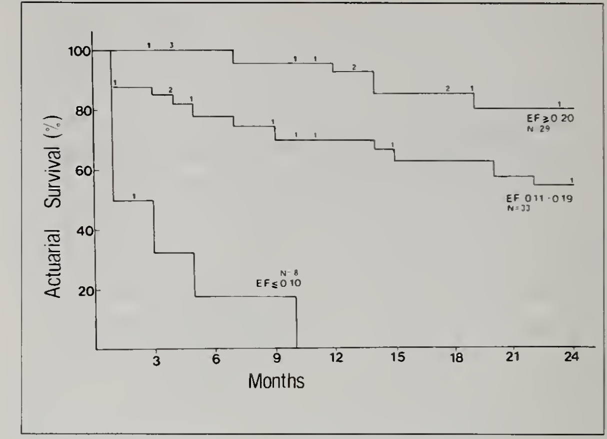

FIGURE 3: Actuarial survival in idiopathic cardiomyopathy according to ejection fraction (EF) on radionuclide scan. Group 1 = left ventricular EF ≤ 0.10 (n = 8); group 2 = left ventricular EF 0.11-0.19 (n = 33); group 3 = left ventricular EF ≥ 0.20 (n = 29). Reprinted with permission from Keogh AM, et.al.: Timing of cardiac transplantation in idiopathic dilated cardiomyopathy. Am J Cardiol 61:418-422, 1988.

Of critical importance to the long-term success of heart transplantation is careful long-term follow-up and rejection surveillance. Acute cardiac rejection is often clinically silent until the process is far advanced. Many noninvasive tests have been studied such as EKG voltage changes, serologic and cytologic markers, echocardiography, and magnetic resonance imaging, but the outpatient endomyocardial biopsy under fluoroscopic or echocardiographic guidance remains the gold standard for both the routine screening and symptom-directed diagnosis of rejection. Endomyocardial biopsy allows the diagnosis of acute rejection before significant or irreversible graft damage occurs. Further, immunosuppression can be individualized and tapered for each patient to minimum levels decreasing side effects and infectious complications. Chronic vascular rejection (expressed as graft atherosclerosis) affects up to 30 percent of patients by five years and is the most common indication for retransplantation. Effective preventive measures have not been identified, but screening with stress thallium testing and/or routine coronary angiography can identify patients needing retransplantation.

Actuarial survival curves for the MUSC group and from the International Society for Heart Transplantation Registry[10] are shown in Figure 4. Not only survival, but also the quality of life is significantly improved with heart transplantation. Rehabilitation rates are better than 90 percent. In our own series of nearly 40 patients, two-thirds of recipients who are more than six months post-transplant have returned to work or their full premorbid activity.

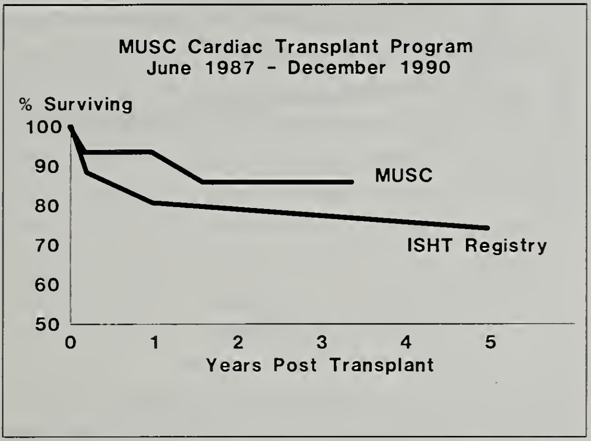

FIGURE 4: Actuarial survival of 36 MUSC heart transplant patients through January 1, 1991 compared to actuarial survival reported to the International Society of Heart Transplantation Registry.[10]

Heart-lung and Lung. The many difficulties inherent in transplanting the human lung, as first encountered by Hardy and coworkers at the University of Mississippi in 1963, delayed the widespread clinical application of this procedure until success in cardiac transplantation in the early 1980s led to renewed effort. In 1981, the first successful heart-lung transplant was performed at Stanford University in a woman with primary pulmonary hypertension. Heart-lung, single, and double lung transplantation are now performed in 58 centers worldwide. Through 1989, 785 heart-lung, 157 single lung, and 48 double lung transplants had been reported to the ISHT Registry.[10] The indications and selection criteria are in constant flux as this is still a new and rapidly developing field (Table IV). The choice of procedure depends on the indication for transplantation. Heart-lung transplantation was initially conceived as therapy for primary pulmonary hypertension. Indications were then expanded to include virtually any disease producing end-stage pulmonary failure. Because heart-lung transplantation requires the use of cardiopulmonary bypass and removal of a frequently normal heart, single lung transplantation offers a simpler procedure for those patients without cardiac involvement.

TABLE IV
SPECIFIC INDICATIONS FOR LUNG AND HEART-LUNG TRANSPLANTATION

Heart-lung transplantation:
End-stage cardiopulmonary disease requiring replacement of heart AND BOTH lungs:

1. Irreversible cardiogenic pulmonary hypertension, acquired or congenital heart disease. (Eisenmenger Syndrome)
2. Primary pulmonary hypertension with irreversible cor pulmonale.
3. Pulmonary parenchymal fibrotic or obstructive disease with severe cor pulmonale.

Single lung transplantation:
Pulmonary fibrotic, obstructive, or vascular disease without chronic pulmonary sepsis, severe bullous emphysema, or irreversible cor pulmonale.

Double lung transplantation:
Severe pulmonary fibrotic, obstructive, or vascular disease, especially those associated with pulmonary sepsis or severe bullous emphysema (e.g. cystic fibrosis), but without irreversible cor pulmonale.

Single lung transplantation may be performed through a lateral thoracotomy incision without cardiopulmonary bypass. The donor's other lung and heart may be used for different recipients. Single lung transplantation was originally used for patients with end-stage pulmonary fibrosis in which the transplanted lung would be preferentially ventilated. The indications were expanded when it was realized that the predicted ventilation and perfusion mismatches with air trapping in chronic obstructive disease or with graft overcirculation in pulmonary hypertension did not occur. This has resulted in changes in the diagnoses for which single lung transplantation was performed over the last two years with nearly equal distribution between pulmonary fibrosis and emphysema. Single lung transplantation has recently been used successfully for primary pulmonary hypertension.

Double lung transplantation began in 1987 after it was demonstrated that with relief of primary pulmonary hypertension, moderately severe cor pulmonale would regress making transplantation of the heart unnecessary. This was carried to its logical extreme in the "domino-donor" transplant operation in which the heart and lungs of a patient with cystic fibrosis and right ventricular hypertrophy are replaced with a heart-lung transplant. The cystic fibrosis patient then becomes the donor of a heart with right ventricular hypertrophy to a patient needing a heart transplant but whose pulmonary vascular resistance is too high to accept the heart from a donor with a normal right ventricle. The result is two thoracic transplants from a single cadaveric donor. Double lung transplantation is now used primarily for patients without right heart failure but whose lung disease is complicated by chronic pulmonary infection in which both lungs must be removed to prevent contamination of the graft.

Immunosuppression for heart-lung and lung transplantation differs from standard triple therapy in the avoidance of corticosteroids for the first two postoperative weeks. This is because of clinical and experimental evidence of poor tracheal or bronchial anastomotic healing in the presence of perioperative steroids. One of the antilymphocyte globulins or OKT3 is substituted for prednisone during the first 10-14 days.

Long-term follow-up routines are similar to those for cardiac transplantation except that serial pulmonary function testing and chest radiography take on special significance. Endomyocardial biopsy is limited to those patients receiving heart-lung transplants. In patients who develop pulmonary infiltrates, transbronchial biopsy has been used to differentiate acute rejection from infection with improving results. Just as chronic vascular rejection (graft atherosclerosis) is emerging as a major source of late graft failure in heart transplantation, bronchiolitis obliterans may limit the long-term success of lung transplantation.

The results of heart-lung and lung transplantation continue to improve largely from better operative survival. Intraoperative technical problems remain the most common cause of early death and include anastomotic breakdown, hemorrhage and primary graft failure. Infection remains a common cause of early and late morbidity and mortality. Rejection is responsible for about 20 percent of deaths.[10] Actuarial survival after heart-lung and single lung transplantation are identical. Higher operative mortality accounts for the lower survival for double lung transplantation (Figure 5).

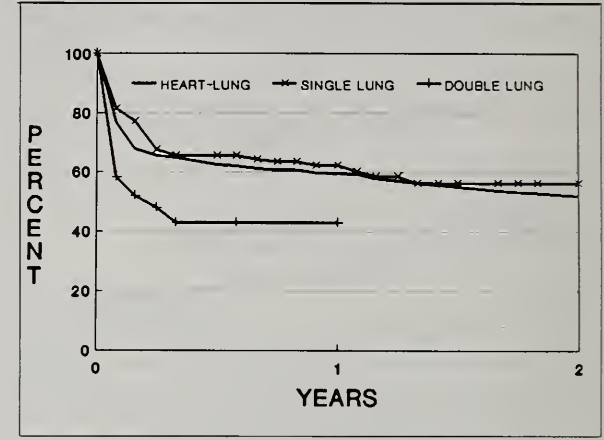

FIGURE 5: Actuarial survival associated with combined heart-lung, single lung, and double lung transplantation. Reprinted with permission from Kriett JM, Kaye MP: The registry of the International Society for Heart Transplantation: seventh official report—1990. J Heart Transplant 9:323-330, 1990 .

Pancreas. Although insulin therapy has made life possible for the 15,000 new Type I diabetics diagnosed yearly, the complications of nephropathy, retinopathy and neuropathy will seriously affect the lives of over half within 20 years as well as impose marked limitations in lifestyle. The goal of pancreas transplantation is to allow insulin independent normoglycemia in Type I diabetics and prevent or control the secondary complications of the disease.

Since Richard C. Lillehei and colleagues at the University of Minnesota transplanted the first pancreas in 1966, over 2,000 segmental and whole organ transplants have been performed in over 120 centers worldwide. Over 400 were reported to the international registry in 1988 alone. The risks of immunosuppression initially limited the procedure only to those patients who also required kidney transplants for diabetic nephropathy. As the success of pancreas transplantation has improved with more surgical and postoperative experience, the indications for transplantation in some centers have been liberalized. Some diabetics who have previously received successful kidney transplants are now receiving pancreas transplants. In addition some non-uremic diabetics are also being considered for pancreas transplantation in order to halt developing nephropathy and retinopathy.

Current research is directed toward the use of isolated islet cells and toward the technical problems of segmental and whole organ transplantation. These issues include the management of the pancreatic duct and its exocrine secretions and the propensity for thrombosis of the donor splenic artery and vein upon which the graft is based. At the present time, a small portion of the duodenum is left on the pancreas graft. This is sewn to the recipient urinary bladder to allow drainage of the exocrine secretions. Because the exocrine pancreas is very sensitive to rejection, this method provides the simple monitoring of urinary amylase as one technique of rejection surveillance.

The results of pancreas transplantation have improved as the technique has developed. With the bladder drainage technique, Minnesota has reported a one percent operative mortality with 98 percent of patients surviving one year. Further, 71 percent and 56 percent have functional grafts at one and three years. Careful tissue matching improves these results significantly. The additional expense of simultaneous pancreas transplantation with kidney transplantation has been estimated at $35,000. Thereafter, there are few additional costs beyond those of kidney transplantation alone.

TISSUE TRANSPLANTATION

Tissue transplantation from cadaver donors is among the unrecognized miracles of modern surgery, affecting virtually all of the subspecialties. Human tissue uses are so diverse and numerous that much more than listing is impossible here. In orthopedics, cryopreserved osteochondral transplants are used to replace cortical and cancellous bone defects too large for autografting and resulting from tumor rejection or trauma. Since the homograft bone is gradually replaced by autogenous tissue, in many cases it is superior to prosthetic replacement which may loosen and deteriorate with time. Four basic types of grafts are performed: (1) *osteoarticular in* which all or part of a functional joint is included with the bony replacement; (2) *intercalary* consisting of the shaft of a long bone without joint; (3) *allograft plus prosthesis* in which the bone graft was coupled to a joint prosthesis; (4) *allograft arthrodesis* in which the graft is used to span an excised joint. With such procedures, over two-thirds of patients enjoy a good or excellent result.[12]

Despite the relative success of mechanical and bioprosthetic cardiac valves, the ideal replacement for these complex structures has not been found. Mechanical prosthetic valves are quite durable but are prone to thromboembolic complications and require lifelong anticoagulation. Bioprosthetic valves do not require anticoagulation but have a limited life span because of calcification and structural degeneration, especially in younger patients. Both are foreign-material susceptible to infectious complications. In the aortic position, the fresh, antibiotic-sterilized aortic valve homograft (first used by Ross in 1962) has been shown to be a reasonable solution to many of these problems. Limitations of availability experienced with the fresh valves have been largely overcome by cryopreservation techniques. There is some evidence of continued long-term viability after cryopreservation and implantation.[13] Aortic and pulmonic homografts are presently used for freehand aortic valve replacement, aortic root replacement, valved conduits for complex congenital cardiac reconstruction, and to replace the autogenous pulmonic valve when it is used as an autograft for the aortic position.[13] Perhaps the aortic valve homograft is most useful for reconstruction of an infected aortic valve with aortic root abscess allowing valve replacement without the use of foreign material.

For the victim of thermal injury, early burn wound closure is of the utmost importance for survival and recovery of function. When the patient's own donor sites are inadequate due to the size of the burn or other injuries, early temporary closure can often be achieved with allograft or xenograft skin. These are temporary solutions but may provide the time needed for donor site healing providing more autologous skin for grafting. Although porcine xenografts do not become vascularized and thus serve primarily as a biologic dressing, fresh allograft skin does and may be left in place until rejection occurs. Both autograft and allograft epidermal cells have been grown in tissue culture as a bilayer using a neodermis from animal sources and may serve as acceptable burn wound coverage in the future.[14]

Homograft tympanoplasty provides the patient with a failed standard tympanoplasty an opportunity for hearing when the tympanic membrane and middle ear structures are irreversibly damaged. Transplanted structures appear to act as a biologic template for their gradual replacement with host tissues. Results of over 90 percent success have been reported for buffered formaldehyde-preserved grafts.[15]

The cornea was the first solid tissue successfully transplanted in humans. Today 10,000 corneal transplants (keratoplasty) are performed yearly in the United States. Success without immunosuppression results from the avascular nature of the cornea making it a naturally privileged site. For the patient with a nonvascularized host cornea, the chances for visual rehabilitation are 95 percent. With a vascularized host cornea, the likelihood of maintaining a clear graft ranges from 35-80 percent. Keratoplasty can be of two types. Lamellar keratoplasty is a partial thickness graft used to restore normal thickness to the cornea or to replace corneal opacity limited to the superficial portion of the cornea. Penetrating keratoplasty is full thickness replacement and involves the anterior chamber. It is used for an opaque cornea, a thin or distorted cornea, or lost cornea due to necrotizing ulceration or trauma.

THE ORGAN DONOR

The major limiting factor in all transplantation is the availability of suitable organ donors. The use of living related donors for paired organs such as in renal transplantation has been long established. Although the immunologic advantage of the living related donor improves graft survival of renal and pancreatic transplants over those from cadavers, fewer than one-third of all renal recipients have a living related donor available.[1] Starnes at Stanford University has successfully used one lobe of the lung as a single lung transplant from mother to child. Transplantation of the left lateral segment of the liver from parent to child has been similarly performed. However, it is unlikely that this will significantly impact the shortage of lungs or livers for transplantation. The risks of donor nephrectomy[17] and partial hepatectomy or pancreatectomy raise significant ethical questions as well. For these reasons, cadaveric donors provide the vast majority of solid organs for transplantation.

The ideal organ donor is a previously healthy individual who has suffered a fatal brain injury. There are many reasons why organ donation remains inadequate including failure to identify potential donors, failure to procure organs before the development of hemodynamic instability, and most importantly, failure of consent for donation. This is discussed by Fitts and Kay elsewhere in this symposium.

The determination of death by central nervous system criteria begins the donation process. The suggested guidelines for the determination of death have been outlined and are discussed by Rudy et al. elsewhere in this symposium. Once donor referral takes place, the management and evaluation of the potential donor proceeds. Donor management consists primarily of the maintenance of hemodynamic, fluid and electrolyte, respiratory, and temperature homeostasis. With loss of central nervous system function, cardiovascular instability often requires a combination of volume, dopamine, and thyroxine to prevent damage of the transplantable organs. Diabetes insipidus frequently follows brain death and leads to dehydration, hypernatremia, hyperosmolarity, and hypokalemia if not treated with vigorous rehydration, potassium replacement and pitressin. There are special ventilatory considerations for the potential lung donor. Detailed guidelines for donor management have been recently reviewed.[18]

The evaluation of the potential cadaveric donor includes the review of the diagnosis of death, a general clinical evaluation common to the donation of all organs, and specific evaluation of the organs to be donated. To be considered for cadaver organ donation, the donor must have intact circulation, no systemic malignancies, infections, carrier states, or other systemic disorders. Age requirements vary with the individual organs to be transplanted with "physiologic" age more important than chronological age. Particular attention is paid to the possibility of overt or occult sepsis. Intensive care unit patients, especially after major trauma have usually been ventilator dependent for several days, have indwelling Foley catheters, and invasive monitoring lines, all of which may act as portals for microbial invasion. The current exclusion criteria for consideration as a cadaver organ donor and for donation of the individual organs in use at the Medical University of South Carolina are listed in Table II. Since lung transplantation at MUSC is still in the planning stages, generally accepted lung and heart-lung criteria are given. Exclusion criteria change, so it is always best to refer a potential donor to the organ procurement organization if there is any doubt about suitability. All procurement is finally and ultimately based upon examination of the organs at the operating table prior to their removal.

For tissue donation, the general infection and neoplasm criteria for organ donation are modified to include the absence of infection involving the tissue to be donated. However, donations from nonbeating heart cadavers are possible up to 12 hours after death. This expands the donor population considerably beyond that available for donation for solid organ transplantation.

The development of eye banking is one of the great success stories of cadaver organ donation. Since 1945, when the first eye bank was organized in the United States, eye banking has expanded worldwide to virtually every city supporting modern eye surgery. The widespread use of donor corneas bears evidence to the results of eye banking efforts including some rather progressive legislation. In Maryland and some other states, the medical examiner may remove the cornea in any autopsy without specific permission.[16]

In South Carolina, the South Carolina Organ Procurement Agency provides donor services for transplantation, donor referral, and information on organ donation. Information on tissue donation and referrals can be directed through Southeastern Tissue Services, a branch of the American Red Cross, at 1-800-922-5986 or the South Carolina Organ Procurement Agency. They can be reached 24 hours a day at 1-803-724-5563. Information on tissue donation and referrals can be directed through Southeastern Tissue Services, a branch of the American Red Cross, at 1-800-922-5986 or the South Carolina Organ Procurement Agency. The United Network for Organ Sharing (UNOS), the Federal contractor for coordination and regulation of organ transplantation activities in the United States also has a 24 hour hotline for donor referral and management questions at 1-800-USDONOR.

The safety and efficacy of organ and tissue transplantation have been firmly established. The cost effectiveness of renal transplantation has been carefully documented. By the most conservative estimate, at least 15,000 renal transplants should be performed yearly. The gap can be filled by concentrating on the 80 percent of potential donors that are now unavailable because of refused consent and overlooked referrals. The combination of vigorous efforts toward public education, new and innovative legislation and increased activity of the established organ procurement and transplant network can give hope to those patients whose lives are limited by end-stage organ failure. With this clinical introduction, the major thrust of this symposium will be the cadaveric multiple organ and tissue donor. □

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JUNE 1991

HIGHLIGHTS OF MAY 23 BOARD OF TRUSTEES MEETING

At its meeting on May 23, the board decided to support the concept of the Palmetto Health Care Access Project by the Palmetto Project, a nonprofit organization whose mission is to initiate and support innovative and effective programs to improve South Carolina. A decision was also made to develop a comprehensive SCMA policy on medical records, including release of records, copying charges, ethical principles and other related issues.

The board also addressed issues pertaining to physical therapists, nursing education and positive identification for controlled prescription drugs.

The special SCMA membership drive which is in progress was described. Nonmembers are being informed of the large savings on JUA premiums achieved as a result of SCMA actions and are also being asked to support future SCMA actions by spending part of this savings on SCMA dues.

The Public Relations Plan was approved; in addition to the usual SCMA media and other communications efforts, the SCMA will develop materials on living wills for physicians' offices.

MEDICARE UPDATE

By now, the April/May Medicare Advisory has been mailed to your office by BC/BS of SC. Please read this advisory carefully. It contains important billing and coverage information. Included is information on Physician Payment Reform, Medicare Secondary Payor, CPT-4 modifiers, emergency services, office visits and a letter from HCFA (Health Care Financing Administration) on withdrawing from the Medicare program and some updated Health Manpower Shortage Areas. There is also more information on what to do in case of overpayments, professional relations visits, Medicare ID card revision and much more.

On page 36 of this advisory, "People with Permanent Kidney Failure," should read that Medicare is secondary payor to EGHPs for up to 18 months for beneficiaries who have Medicare solely because of permanent kidney failure if their entitlement began after February 1, 1990.

At the time this newsletter is being printed, the SCMA has not had an opportunity to review the new federal guidelines on physician payment reform. We will provide you with this information as soon as possible. If you have questions, please contact Medicare or Cindy Osborn or Barbara Whittaker at SCMA.

HIGHLIGHTS OF THE UPCOMING AMA MEETING

The AMA Annual Meeting will be held June 23-27, 1991 in Chicago.

Of course, a major highlight from the SCMA's perspective will be Randy Smoak's campaign to become an AMA Trustee.

Major issues to be discussed by the AMA House of Delegates will include HIV testing and consent issues, guidelines for withholding life-sustaining treatment when patients are incapable of expressing their wishes, managed care, access to care in rural areas, financial arrangements between hospitals and physicians, practice parameters and, of course, Medicare.

There will be two special seminars, one on the RBRVS and one on PROs.

Donald G. Kilgore, Jr., MD, SCMA Delegate to the AMA, will prepare a detailed summary of the meeting for the July issue of *The Journal.*

CAPSULES

The Order of the Palmetto, the state's highest honor for community service, has been presented to John C. Hawk, Jr., MD, SCMA Past President and former Delegate to the AMA; and Mrs. Betsy S. Terry, Immediate Past President of the SCMA Auxiliary.

The award to Dr. Hawk was presented in St. George where he treated hundreds of patients during his long career in medicine. Dr. Hawk was director of the cancer clinic and coordinator of cancer teaching at MUSC from 1951 until 1966 when he resigned to enter private practice. He continued to serve MUSC as a clinical professor of surgery.

Mrs. Terry, of Easley, has been active in both the SCMA and Greenville County auxiliaries. Her community activities include service on the SC Arts Commission, Peace Center for the Performing Arts Board, Greenville County Museum of Art Association Board, and the SC Arts Foundation. She has also been active in educational areas such as the Greenville Literacy Board and the Speech, Hearing and Learning Center Guild.

TRANSPLANTATION OF GAMETES AND EMBRYOS: AN OUTGROWTH OF ASSISTED REPRODUCTIVE TECHNOLOGIES*

G. WILLIAM BATES, M.D.
WILLIAM R. BOONE, PH.D.

The development of assisted reproductive technologies during the past two decades opened new possibilities for reproduction in couples who once were believed to be irreversibly infertile. Now, with the availability of gametes (sperm and oocytes) from donors, and with the production of embryos through *in vitro* fertilization techniques, the transplantation of gametes and embryos from donors to genetically dissimilar recipients has become part of the standard of practice in reproductive endocrinology centers.

Moreover, the transplantation of gametes and embryos is not complicated by the need for tissue typing and immunosuppression. The human embryo enjoys immunologic privilege and rarely suffers immunologic rejection by the human uterus. Once the endometrium is synchronized to facilitate embryo implantation, pregnancy is sustained in a physiologic state.

Donor semen has been utilized for a number of years as a source of sperm for couples where the male partner is subfertile or infertile. However, donor oocytes were not available for couples where the female partner suffers from ovarian failure until recently.[1,2] One percent of women will undergo ovarian failure prior to age 40-years.[3] With the development of *in vitro* fertilization and controlled ovarian hyperstimulation, many oocytes can now be retrieved for fertilization for immediate and future use with couples other than the original genetic partners.

Oocytes are harvested by transvaginal, ultrasound-guided, aspiration. Once oocytes are harvested, they must be fertilized immediately to produce embryos. Oocytes cannot be successfully cryopreserved for later use; embryos can. Some of the resultant embryos can be implanted immediately; others can be cryopreserved indefinitely. This latter fact enables physicians to synchronize the endometrium of genetically dissimilar women to receive embryos from women willing to donate surplus oocytes, or from women who are willing to undergo ovarian hyperstimulation for the purpose of serving as oocyte donors. The down side to cryopreservation of embryos is the significant reduction in viability of these cells.[4]

Many couples delay childbearing until careers are established only to find their reproductive capacity compromised by natural aging. Oocyte donation provides new avenues of hope for these couples.[5] In a preliminary report, five term deliveries occurred in seven women between ages 40-44 years in nine synchronized donor oocyte cycles.[6] This high success rate encourages many otherwise infertile couples to pursue pregnancy.

Gamete and embryo transplantation must be included in the sphere of human tissue transplantation. Gamete and embryo transplantation is unique in that tissue typing and immunosuppression are not necessary for successful outcome. ☐

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ETHICAL CONSIDERATIONS AND CONTROVERSIES IN TRANSPLANTATION*

NORA KIZER BELL, PH.D.
DONALD E. SAUNDERS, JR., M.D.

In 1988, the South Carolina Medical Association (SCMA) adopted a new version of "Principles of Medical Ethics"[1] in which the current American Medical Association (AMA) "Principles" were accepted and expanded to include six additions. The first of the SCMA additions states: "A physician is loyal first to the patient, then to the profession and larger communities."

A hierarchy which places loyalty to the patient above loyalty to society does not necessarily mean that the first loyalty would absolutely control action when there is conflict with professional or societal loyalty. Instead, one interpretation is that loyalty to the patient should be given more weight than loyalty to the profession or society, with the understanding that this extra weight could be more than counterbalanced by analysis of the means necessary to accomplish a course of action or the consequences expected from the action.

In the specific problem of procurement of human organs and tissues for transplant, consideration of this hierarchy of loyalties allows the ethical analysis to be divided into two areas of concern: (1) the physician-patient relationship and (2) the physician-society relationship.

THE PHYSICIAN-PATIENT RELATIONSHIP

The physician attending a patient who is a potential organ donor could perceive (1) a conflict with society in which there is an acknowledged shortage of organs and tissues for donation and (2) a conflict with other members of the medical profession, specifically transplant surgeons, eager to find organs for their patients on waiting lists.

Both these "conflicts" tend to be remote and depersonalized because the potential organ recipients and their surgeons are usually unknown to the potential donor's physician, and the latter is legally prohibited from being involved with the transplant recipient by the Uniform Anatomical Gift Act, which has been adopted by all fifty states.[2]

Upon more careful analysis, there should be no ethical conflict due to competing claims for the loyalty of the potential donor's physician because the patient does not become a potential donor until he/she is legally and medically dead. Therefore, instead of an ethical issue there is a *medical competence* issue which requires that physicians who assume the responsibility of diagnosing death should have sufficient knowledge and skill to accurately diagnose brain death. In addition, these physicians need to know about the current success of organ and tissue transplant surgery and to know the procedures to take after death to obtain permission for organ and tissue retrieval. These are *medical knowledge* issues, not ethical issues.

The amount of new medical knowledge makes it impossible for physicians of the many specialties to master more than a small part of the total knowledge base; however, certain fundamentals cross specialty boundaries. The diagnosis of brain death and the need for cadaver organs and tissues for transplant should be familiar to all practicing physicians.

In 1977, the United States Congress charged the President's Commission on Ethical Problems in Medicine with developing criteria for death which were acceptable to both the medical and legal communities.[3] In 1981, the President's Commission, the American Medical Association, the American Bar Association and the National Conference of Commissioners on Uniform State Laws agreed on the following definition: "An individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2) irreversible cessation of all functions of the entire brain, including the brain stem, is dead." This definition was incorporated in the "Uniform Determination of Death Act" which added only: "A determination of death must be made in accordance with accepted medical standards."[4]

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Brain death is death. Optimal organ donors are those who meet brain death criteria rather than cardiovascular/respiratory criteria. The problem of loyalty to one's patient as opposed to using parts of one's patient for the benefit of others is radically changed when death occurs. Yet, health care professionals are not knowledgeable about brain death diagnosis.[5] This fact is further discussed elsewhere in this symposium (Fitts and Kay).

The reluctance of medical specialists to assume responsibility for certifying brain death remains a major barrier to organ donation. Physicians "resent the burden of certification and regard the duty as a thankless and time-consuming task."[6] The challenge for the attending physician at the time of a patient's death is to shift from adhering first to loyalty to one's patient to the physician's duty to a society short of organs for transplant.

If the patient has previously indicated a desire not to be an organ or tissue donor, respect for patient autonomy favors acknowledging his/her right to refuse. If the patient previously indicated a desire to be a donor, one could proceed legally with harvest of organs. In practice, however, physicians and others still do not proceed without first gaining permission of the family or others responsible for disposition of the body. The reasons probably include a respect for the recently deceased patient's social relationship with his family, a respect for the family, and a desire to avoid the adverse publicity which could result should the family publicly object or seek legal means to prevent organ retrieval.

The physician and the family experience the emotional impact of death in what is often sudden and unexpected circumstances in young, previously healthy persons who make the best organ donors. The physician's attempt to prevent premature death has failed. His dead patient is on a ventilator and remains warm and dry with a well-functioning circulatory system. Although exercising sensitivity and compassion for the family, here, as in other circumstances, the physician must exercise the willpower of the intellect, which must rule over the physician's emotions.[7]

Although families who must make these decisions are less knowledgeable than physicians and much more affected by the above mentioned emotional and cultural influences, follow-up studies have shown residual positive feelings based on personal tragedy softened by knowledge of dramatic help for others in desperate need.[8]

PHYSICIAN-SOCIETY RELATIONSHIP

> "The thought of vital organs such as livers, hearts, and kidneys, being transplanted routinely at our nation's best medical centers is a tribute to how far transplant technology has evolved . . . it would be a tragedy, if, after realizing that we have the technological capability, we don't take advantage of affording this remarkable therapy to *all* needy patients."
>
> —participant at House Science and Technology Subcommittee on Investigations and Oversight

Just how far should we go in taking seriously the above testimony—how far should we follow the technological imperative?

The extraordinary advances made in transplantation technology not only promise previously unimagined benefits both for individual patients and for society, they also promise to generate profound health and public policy dilemmas. As Roger Evans argues, "health care resources have become so constrained that we are unable to offer every desired health care benefit."[9] And, as Daniel Callahan argues, it isn't even clear that we should.[10] Hence, an overriding issue for the future may well be whether we can afford organ transplantation at all and, if so, whether the benefits of transplantation really outweigh its costs.[9] Arguments for setting limits on the use of technology will require careful analysis of the ordering of priorities in allocating all healthcare resources. Such analysis is clearly beyond the scope of this paper.

What we propose to examine here, however, is no less daunting a task: consistent with traditionally held principles of medical ethics and with our broader set of moral intuitions, how can we increase the supply of organs to meet the ever-increasing transplant demand?

Edward Keyserlingk explores three options:

(1) the buying and selling of organs—a strategy which treats organs as commodities of exchange.

(2) opting-in, a policy which requires explicit donor consent—a strategy which treats organs as gifts.

(3) opting-out, a policy which requires explicit refusal, in the absence of which organs are taken—a strategy which treats organs as natural resources in the "public domain."

As traditionally conceived, the option of buying/selling organs has held least appeal for physicians and ethicists. Some of the more obvious objections to this option include the complaint that it places a price on human life and health that our moral intuitions tell us shouldn't be governed by the "marketplace." For Keyserlingk, the option of buying and selling organs fails an even more basic test, namely the Kantian imperative that persons should always be treated as ends in themselves, autonomous and deserving of respectful treatment, and not merely as means to the ends of others.[11] A policy that would approve the buying and selling of organs opens up the possibility that the dignity of other persons—"either the financially poor organ seller" or the "wealthier but desperate organ buyer"—will be exploited.

Opting-in, as we presently practice it, clearly hasn't worked. "Opinion polls consistently find that a majority of people are willing to be organ donors upon death, though only a small minority actually get around to signing a document to that effect."[11] There are difficulties inherent in encouraging voluntarism, especially among those most likely to be donors: the "best" organ donors are those persons least likely to have confronted death and dying issues or to have made an advance directive concerning organ donation: healthy, active, disease-free children and adults who are sudden trauma (usually head injury) victims. The spirit of altruism necessary for opting-in to work—that is, making a "gift" of one's organs to society—is compromised by more traditional practices associated with approaching the family of a recently deceased patient. As described above, in spite of legislation that typically states that unrevoked donor consent provides "full authority" to retrieve organs for transplant, family members are still given the opportunity to refuse donation even when the deceased patient has expressly stipulated otherwise. As Keyserlingk properly notes, such a practice is of course sometimes morally justified, and is obviously consistent with thinking of organ donation as a gift. (And, as organ procurement personnel properly note, to do otherwise is to feed lingering public fears and paranoia about organ "harvesting.") On Keyserlingk's view opting-in policies should make clear that permission of family members will only be sought when no consent or refusal by the deceased is available.[11]

Opting-out, it is generally conceded, is the strategy most likely to produce necessary quantities of donor organs. Presuming prior consent to donate, absent a refusal, is obviously the most efficient and effective procurement option (if one's goal is to increase the pool of available organs). However, it is not without serious difficulties.

The philosophical presupposition that one's organs are natural resources, belonging in some sense to society as a whole, underlies the belief that one must withdraw consent to avoid having one's organs retrieved after death. While it may be perfectly consistent with the intentions of most people in society, it seems inconsistent with other beliefs we hold about bodily integrity and an individual's right to decide what will or won't happen to his body. What's more, in order to insure justice and a respect for personal (cultural, ethnic and religious) freedom, such a policy seems to depend in large part on successful and broadbased education and publicity (strategies that haven't been successful in promoting the present policy).

To be fair, an opting-out policy would seem to depend as well on the practicable means for registering and honoring refusals, such as might occur when one applies for a driver's license or pays taxes. (Again, something that hasn't worked well with the present policy.) In fact, opting-out proposals seem to take their cue from the very lassitude that has meant the marginal success of opting-in strategies. That is, opting-out proposals seem designed to exploit the realization that people aren't likely to make the effort to opt out any more than they make the effort to opt in.

Complicating consideration of the opting-out proposal even further is the fact that under our current system of paying for transplantation, most heart, liver, lung, heart-lung, and pancreas transplants are paid for by private insurance.[9] Thus, a system in which everyone's organs are available for donation, unless they opt out, would be likely to benefit only those who could afford the transplant surgery.

Clearly, each of the options reviewed above leaves cause for concern—just as each has dimensions that recommend it. What's more, as Youngner points out, transplantation as a technology still hasn't cleared several psychological hurdles.[12] Choosing a procurement option that attempts to increase the donor pool by treating organs either as a commodity for exchange or as natural resources fails to take adequate note of the psychological factors important to the development and implementation of a successful organ procurement strategy.

Youngner suggests further that attempts at increasing the donor pool by expanding the definition of death to include persons in persistent vegetative state or anencephalic newborns heightens peoples' ambivalences about organ procurement and transplantation.

Our view is that, for now, we should probably choose to continue the option currently in practice, namely, opting-in, and try to improve on it through education—especially education that is ethnically and culturally specific. We must educate physicians to diagnose brain death without equivocation and to appreciate the need for organ transplant. We must give society a little more time to understand and appreciate transplantation and transplant technology—we must let them see more transplant successes. We must give persons, including medical personnel, more time to accept brain death. We must, as Youngner suggests, allow society to develop new rituals of death surrounding dying/ transplant technologies.

In the future, after we've broadened the social, spiritual, and psychological concepts of death, we can explore improving upon the opting-in option—perhaps by choosing a plan that asks people to make a commitment to share their organs when they no longer need them in exchange for a guarantee of access to transplant for themselves if ever they are in need.[13] ☐

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MEETING ANNOUNCEMENT

South Carolina Chapter American Academy of Pediatrics Annual Scientific Session

"Update in Pediatric Radiology— New Horizons"

Faculty: Leonard E. Swischuck, M.D., Galveston, Texas
Roderick I. Macpherson, M.D., Charleston, South Carolina
Meeting Site: The Grove Park Inn, Asheville, North Carolina
Meeting Dates: Thursday, August 1-Sunday, August 4, 1991
Credit: Applied for AMA Category I and PREP, 6 hours.

For more information contact: Debbie Shealy, SC Chapter AAP, P. O. Box 11188, Columbia, SC 29211, (803) 798-6207.

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THIRD PARTY PAYMENT AND THE COST OF TRANSPLANTATION

ROGER W. EVANS, PH.D.*

As the results of transplantation have improved, greater attention has focused on both per procedure costs and total program expenditures (i.e., total transplant costs incurred by insurers).[1] Changes in transplant technology are expected to decrease procedure costs, while donor organ availability will moderate total program expenditures.[2] Nonetheless, public and private health insurers have not been content to sit by idly and allow hospitals to dictate the future of transplantation. Instead, they have taken steps to assure quality while containing costs. The designation of transplantation programs as "centers of excellence" has become the foundation of a more aggressive health insurance industry.[3]

While quality is the foremost concern of insurers, cost is also a major consideration. Centers of excellence are initially chosen on the basis of their demonstrated ability to provide high quality care. However, centers of excellence must also be willing to accept a prenegotiated set price for the treatment provided, thus allowing insurers to control costs. Patients are provided incentives to use designated centers. These incentives include increasing surgical benefits from 70 or 80 percent to 90 or 100 percent, as well as paying travel expenses.

Unfortunately, data on the costs of transplantation are sorely lacking. It is unclear, for example, exactly what transplant programs are using to derive estimates of cost. Often charge data are used as a proxy of actual hospital costs.[4] Also, data on the various components of transplant costs are not always clearly identified.[1] For example, were pretransplant, evaluation and posttransplantation data included in the estimates of procedure costs? In short, the concept of discounting may be more apparent than real. As in the retail industry—discounts may be little more than marked-up list prices intended to generate business volume.

Woefully inadequate transplant cost data undoubtedly reflect the changing status of many transplantation procedures. While kidney transplantation has been firmly established as standard therapy for the treatment of end-stage renal disease (ESRD), only recently have insurers accepted liver and heart transplantation as therapeutic as opposed to experimental or investigational treatment.[5] Research funds are usually used to cover the costs of experimental procedures and, as results improve, insurers are expected to pay for what were previously experimental innovations.[6] However, the demands innovative new health care technologies have placed on the health care system are considerable. Consequently, liver and heart transplantation became accepted therapies only after a period of extended debate. Today, heart-lung, pancreas, and lung (single and double) transplantation are still defined as experimental procedures by many major health insurers.[7] Thus, transplant programs performing these procedures often do so at their own expense, at that of the patient, or have been able to obtain research funds for this purpose. As research resources have become increasingly scarce, clinicians are often wont to prematurely define experimental innovations as therapeutic procedures. In short, because of the ambiguity that surrounds many transplantation procedures, the recovery of detailed financial data—costs as well as reimbursement—has been difficult. It is clear, however, that as procedures move from the experimental domain into clinical practice, costs increase largely in response to third party payments. Thus, changes in per procedure transplant procedure charges may have little, if anything, to do with changes in the cost of doing business.

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Clearly a need exists to carefully evaluate the costs associated with transplantation. This is of interest to transplantation physicians and surgeons, hospital administrators, health care policymakers, representatives of the insurance industry, and potential transplantation recipients. To a somewhat limited extent, this paper will present data on transplant procedure *charges*. More detailed data will soon be available from the National Cooperative Transplantation Study.[8] In addition, I will examine what I refer to as the *cost of failure*. Not all patients who could benefit are transplanted, other patients have graft failure and, of course, some patients die years after they receive their transplant. Finally, the paper will conclude with a discussion of the current situation regarding insurance *coverage and reimbursement* for transplantation.

TRANSPLANTATION COSTS

In health care economics a distinction is typically made between *costs* and *charges*.[1] Costs presumably reflect what a hospital actually expends to provide a good or service, less profit or markup. Charges are what a hospital bills a patient for a good or service.[4] *Reimbursement* is the amount a hospital eventually gets paid for a good or service. Charges are always higher than costs, but reimbursement does not necessarily equal charges. In other words, not all insurers pay hospitals for their full billed charges. Occasionally some services or treatments are excluded and left unreimbursed. Under prospective payment systems, such as that of Medicare, some Medicaid plans, and private insurer designated centers, hospitals are paid a prenegotiated fee for their services. Rather than focusing on reimbursement, the data presented here reflect billed patient charges. Few studies have been done examining actual hospital costs, and data on insurance reimbursements are available only on a limited basis.

Table 1 summarizes transplant procedure charges for kidney, heart, liver, heart-lung, and pancreas transplantation. Both a range and an average are provided. These figures represent the total first-year costs of transplantation. Only limited data are available on subsequent year transplantation costs. These are as follows: kidney, $17,000; heart, $33,000; liver, $50,000.[7] Subsequent year costs for heart-lung and pancreas transplantation have yet to be determined for a representative sample of transplant recipients.

TABLE 1
TOTAL FIRST-YEAR CHARGES ASSOCIATED WITH FIVE MAJOR SOLID ORGAN TRANSPLANTATION PROCEDURES

Transplantation Procedure	Per Procedure Charges ($) Range	Average
Kidney	$ 25,000-130,000	$ 51,000
Heart	$ 50,000-287,000	$148,000
Liver	$ 66,000-367,000	$235,000
Heart-Lung	$135,000-250,000	$210,000
Pancreas	$ 51,000-135,000	$ 70,000

The major components of transplant procedure costs include: (1) room and board (2) ancillary services, (3) donor organ acquisition, and (4) professional fees. A detailed summary of transplantation procedure charges for the initial hospital stay for a limited sample of institutions is presented in Table 2. As shown, there are marked variations in charges by procedure, often reflecting differences in length of stay, professional fees and donor organ acquisition costs.[9]

THE COST OF FAILURE

There have been many debates over the economic consequences of transplantation and, as health care costs continue to increase, these debates are likely to become more rather than less frequent. On the one hand, critics of transplantation, often ignoring the benefits patients derive, have argued that health promotion, disease prevention, and maternal and child health care should be given priority over transplantation. On the other hand, the advocates of transplantation often appeal to its immediate patient benefits as well as to its long-term immunological research potential. Transplantation supporters are also quick to point out that it is often more expensive to meet the medical needs of potential transplant recipients than it is to transplant them. In this respect, advocates would make an emotional appeal, arguing that not only does transplantation save money, but many patients truly benefit—they survive, return to work, have fami-

TABLE 2
AVERAGE TRANSPLANTATION PROCEDURE CHARGES
(in 1987 Dollars)

Cost Category	**Kidney**	**Heart**	**Liver**
Room and Board	$ 7,872	$ 31,518	$ 39,353
Ancillary Services			
Medical/Surgical Supplies	801	10,454	3,193
Operating Room/Anesthesia	2,819	27,679	17,394
Pharmacy	5,171	8,878	14,035
Laboratory	4,832	19,809	52,304
Radiology	1,498	5,143	8,395
Blood Administration	562	4,357	8,341
Respiratory Therapy	442	3,384	6,346
Pulmonary Function	0	2,453	0
Miscellaneous	1,941	5,778	4,183
Dialysis	1,046	0	0
Donor Organ Acquisition	7,724	11,644	26,456
Professional Fees	6,879	10,000	36,000
TOTALS	$41,587	$141,097	$216,000

lies, and become otherwise productive members of society.

Unfortunately, only limited data are available on the cost of failure.[10] Clearly many people die awaiting transplantation. The United Network for Organ Sharing reports that 31.1 percent of heart transplant candidates and 23.2 percent of liver transplant candidates died awaiting transplant in 1989.[11] The costs associated with the care of these patients is often considerable. For example, Williams *et al.*, have reported on the costs of treating end-stage liver disease in the absence of a transplant,[12] which averaged $45,643. Although these expenses are considerable, at the same institution the mean *hospital* cost of liver transplantation was $92,866 with a range of $34,997 to $319,337. The approximate total first year costs of liver transplantation were estimated to average $113,422. In some instances it may be more costly to die with end-stage hepatic disease than it is to perform a transplant, but not necessarily so.

The cost-effectiveness of transplantation is far more apparent in the treatment of renal failure than it is for any other transplantation procedure.[13] The alternative, of course, is maintenance dialysis which is currently estimated to cost the Medicare program in excess of $25,000 per patient per year. The cost of transplantation, on a per year of life saved basis, is substantially below $25,000.

The comparative patient survival benefits of dialysis, cadaver kidney transplantation, and living-related donor kidney transplantation differ considerably.[14] At five years, living-related kidney transplantation offers the best prognosis for survival, followed by cadaver kidney transplantation, and then dialysis. Forty-two percent of dialysis patients between 45 and 54 years of age survive five years or longer, compared with 71.1 and 76.8 percent of cadaver and living-related donor kidney transplantation recipients, respectively. Also, as numerous studies have shown, the quality of life benefits of transplantation are substantial.[15]

Thus, transplantation is the most cost-effective modality for treating end-stage renal disease. Consequently, the failure to transplant, given an insufficient supply of donor organs, adds substantially to the cost of treating end-stage renal disease and, at the same time, precludes many patients from enjoying a more satisfactory quality of life. Even today, over 18,000 patients continue to dialyze while they await a compatible donor kidney. If each of these patients was transplanted, the savings to Medicare would be enormous.

Unfortunately, not every transplant is successful—patients die of graft failure while others return to suboptimal therapy.[10] Most of those in this latter category are kidney transplant recipients who return to dialysis or, perhaps, a few pancreas transplant recipients who return to insulin-therapy. In either case, the costs are significant.

We have recently evaluated the costs associated with all of the major outcomes of kidney transplantation.[9] Patients alive with a functioning graft had the lowest transplantation period charges ($36,488), followed by patients who died with a functioning graft ($43,705) and, then, patients who were alive with a failed graft ($47,223). Patients whose grafts failed and they died had the highest in-hospital charges ($116,797). At the end of the first year, total costs for living patients whose grafts failed ($92,072) were substantially higher than they were for living patients who retained their grafts ($51,020).

The Health Care Financing Administration (HCFA) has recently published additional data on transplantation focusing on both the failed graft and successful graft experience.[14] These data confirm the fact that graft failure is expensive. In 1987, overall Medicare reimbursements for all kidney transplant recipients averaged $56,007. Patients whose grafts continued to function beyond one year incurred costs of $6,416, while patients whose grafts failed incurred costs of $35,662.

The foregoing data pose a dilemma. First, a *successful* transplant can be very cost-effective. However, both graft failure and patient death can be very costly. Second, while transplantation can be justified on grounds that the cost of treating dying patients in absence of a transplant is expensive, it must also be acknowledged that the cost of dying following a failed transplant can be equally as high, if not higher. In other words, the costs of death are not averted by transplantation. Whether the patient dies early or late in their posttransplantation trajectory, this will entail considerable costs. Thus, the cost-effectiveness of transplantation is relative to patient outcome.

COVERAGE AND REIMBURSEMENT FOR TRANSPLANTATION

Although insurance coverage for organ transplantation has improved steadily over the years, some significant problems still persist. As already noted, many insurers regard heart-lung, pancreas, and lung transplants as experimental or investigational and do not provide payment. Other insurers pay for these procedures on a case-by-case basis. Generally, incomplete data are available from insurers concerning coverage of organ transplants. With the exception of the Health Insurance Association of America—the trade association for commercial insurers—there is no clearinghouse for information on insurance coverage. Even in the case of the HIAA, only periodic studies have been done to determine which transplantation procedures are covered.[7] Often this is done on a sample survey basis and nonresponse is frequently high.

What follows is a brief discussion of the coverage policies of Medicare, Medicaid, and private insurers.

Medicare. Medicare currently covers four organ transplantation procedures—kidney, heart, liver, and bone marrow.[5] Only in the case of kidney transplantation is coverage offered as an entitlement, meaning about 96 percent of the United States' population is eligible. Restrictions apply to the remaining transplantation procedures. In the case of heart or liver transplantation, coverage is restricted only to those persons who are already Medicare-eligible or live sufficiently long to become so qualified on the basis of permanent disability. Based on disability, persons can qualify for Medicare benefits at the end of 30 months. Most persons dying with end-stage disease will not survive 30 months to qualify for disability. Coverage for both heart and liver transplantation are further restricted based upon various patient selection criteria, including age and indication for transplantation. For example, coverage for liver transplantation is restricted to Medicare-eligible persons who are 18 years of age or younger with biliary atresia only. Medicare is now considering the addition of coverage for persons with seven adult indications for transplantation.[5] Coverage for bone marrow transplantation is restricted to persons with aplastic anemia or acute leukemia only.

Needless to say, with the exception of kidney transplantation, the Medicare program pays for very few transplantations. Because of restrictions associated with the usual indications for transplantation, many aged persons do not qualify for coverage. And, as already noted, a relatively small percentage of Medicare-eligible persons are under 65, disabled, and are appropriately indicated for transplantation.

Medicaid. Medicaid benefits are provided by individual states and involve Federal matching funds.[16] In other words, the Federal government partially subsidizes the Medicaid programs of all states at a level between 50 and 78 percent. It, therefore, has some control over the determinants of eligibility and the benefits offered by individual states. This control is exercised by the Health Care Financing Administration (HCFA), the Federal agency responsible for the Medicare program. Medicaid accounted for $37.5 billion in federal and state expenditures in fiscal year 1985.[16]

Organ transplantation is not a federally mandated benefit under the Medicaid program and, consequently, it is up to the discretion of the states as to whether or not they will offer coverage for various organ transplantation procedures. It is not surprising, therefore, that some Medicaid programs pay for selected transplants, while others do not. All states offer coverage for kidney transplantation, 69 percent for heart transplantation, 92 percent for bone marrow transplantation, and 84 percent for liver transplantation. Far fewer states offer coverage for heart-lung and pancreas transplantation.

Private Insurers. Currently the best available data on the coverage of organ transplants by private insurers have been compiled by the Health Insurance Association of America (HIAA).[7] Coverage for all transplantations has expanded recently, with the majority of insurers offering coverage for kidney, cornea, heart, liver, and skin transplantation. Fewer commercial insurers offer coverage for heart-lung and pancreas transplantation.

In assessing private insurer coverage of transplantation, it is important to keep in mind that, while an insurer may offer coverage for transplantation, employers who extend insurance to their employees may exclude certain transplantations as part of their standard benefit packages. Therefore, the only way to truly know what fraction of people in the United States has coverage for organ transplantations would be to evaluate benefit packages at the level of the employer for each worker in the country. This would clearly be a difficult task to accomplish.

In the United States today, over 37.0 million people are without health insurance and another 30.0 million are inadequately insured.[18] Thus, nearly one out of four Americans do not have insurance for a major extrarenal organ transplantation.[19] Therefore, even with insurance, people may not have transplantation coverage. Moreover, the lack of coverage is more acute among minorities. For example, it it currently estimated that 22.0 percent of Blacks and 31.5 percent of Hispanics are without insurance.[18] Insurance coverage is often offered as an employee benefit and this may further disadvantage minorities who frequently hold jobs that do not include health insurance benefits.

DISCUSSION

Transplantation is expensive and the concerns of insurers related to costs are justified. However, the long-term costs of transplantation may be less than those associated with other commonly accepted medical and surgical procedures.[1] Take, for example, the long-term management of a patient with cancer. Studies have shown that the costs of treating selected cancers can exceed $25,000 annually.[20] Such expenditures are frequently required over multiple years and, thus, in the aggregate, the costs of managing cancer, often with a prognosis more dismal than that of transplantation, exceed those of transplantation.[20] As shown in Table 3, the same is also true for various other medical and surgical procedures. The real issue here concerns cost-effectiveness and how much society is willing to spend on the care of persons dying with end-stage disease.[21] Patients in need of a liver or heart transplantation are dying with end-stage disease. The AIDS patient is also dying, but of an immunologic disorder, and is in need of

TABLE 3
COSTS ASSOCIATED WITH ADVANCED MEDICAL TECHNOLOGIES

Total Parenteral Nutrition	$110,000	Per Year Per Case
Maintenance Hemodialysis	$ 25,000	Per Year Per Case
Treatment of Cancer	$ 30,000	Per Year Per Case
Heart Transplant	$ 23,500	Per Year Per Case
Bone Marrow Transplant	$110,000	Per Case
Major Psychiatric Disorder (Adolescent)	$185,000	Per Case (Lifetime)
60% Burn Patient	$100,000	Per Case
Coronary Artery Bypass Graft	$ 25,000	Per Case
Treatment of AIDS	$19,000-147,000	Per Case (Lifetime)

expensive medical management. The prognosis of the patient with AIDS is far less favorable than that of the heart or liver transplant recipient. The same is true for the patient requiring total parenteral nutrition and in-center hemodialysis. Which of these patients should be treated? What are their lives worth?

Dying is a costly process. Approximately five percent of Medicare beneficiaries who died in 1978 accounted for 28 percent of Medicare expenditures; furthermore, 30 percent of all expenses of decedents occurred in the last 30 days of life, 46 percent in the last 60 days, and 77 percent in the last six months.[21]

Attaching a dollar value to human life has been a longstanding problem, particularly in a society where economic resources have been available to provide the majority of people with access to the most sophisticated medical technology in the world. Today, however, it is often argued that the resources expended on transplantation would be better allocated to disease prevention and health promotion. For example, it is estimated that, for every $400 spent on prenatal care, over $400,000 is saved in the health care of a low birth weight infant. Similarly, it is argued that resources expended on screening tests in efforts to identify cancer have the potential to save more lives than transplantation. These assertions, although insightful, may not always be accurate. The aggregate costs of screening tests, given the number of cases identified, and disease treated, may be cost-ineffective.[22] In short, disease prevention and health promotion may not necessarily be the panacea most envision. All people will eventually die, and the cost of most deaths is considerable. Transplantation must not be discussed apart from the larger issue—what is society willing to commit to both save and maintain human lives?

Efforts by insurers to contain transplantation costs must go forward. The designation of transplantation programs based upon quality of care and cost is an important first step. It will not, however, be the last, nor will it be the panacea that many envision. Also, we must all concern ourselves with improving the rehabilitation prospects of transplantation recipients. Unfortunately, studies have consistently shown that far fewer transplantation patients return to work than are able to do so. In many respects, as shown in Table 4, the return to work experience of kidney and heart transplant recipients is not unlike that of patients on maintenance dialysis.[1, 8, 9, 15] In fact, there is remarkable similarity in the views transplant recipients have with regards to employment and those of other chronically ill people. Following a brush with death, work does not preoccupy the minds of people who are able yet unwilling to work. However, the unwillingness to work may reflect employer discrimination. Prospective employers often view transplant recipients as unreliable employees or a major contributor to increased health care insurance premiums. While the former concerns may be unjustified, the latter are quite legitimate, given the posttransplant costs associated with transplantation described above.

The future of transplantation remains unclear. Total expenditures associated with transplantation may well be moderated due to an insufficient supply of donor organs. This

TABLE 4
ABILITY TO WORK VERSUS ACTUAL EMPLOYMENT STATUS OF DIALYSIS AND TRANSPLANT RECIPIENTS

Treatment Modality	% of Patients	
	Able to Work	Employed
Conventional Kidney Transplantation[1]	74	46
Cyclosporine Diabetic Kidney Transplantation	37	22
Cyclosporine Nondiabetic Kidney Transplantation	61	31
Heart Transplantation	58	32
Liver Transplantation	84	47
Home Hemodialysis	59	36
In-Center Hemodialysis	37	21
Continuous Ambulatory Peritoneal Dialysis	25	16

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[1] Immunosuppression consists of azathioprine and prednisone.

may be the saving grace of transplantation. If transplant procedures were performed at the level for which they are indicated, insurers may be reluctant to offer unfettered access. Also, since we all pay taxes to subsidize public health insurer programs and pay premiums to cover private health insurance benefits, a substantial increase in the number of transplant procedures performed may lead all of us to reconsider our own commitment to expensive health care technology. ☐

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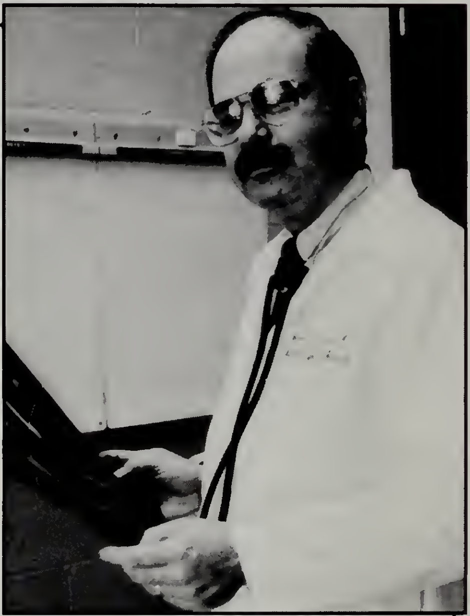

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PSYCHOLOGICAL AND PSYCHIATRIC ASPECTS OF ORGAN AND TISSUE TRANSPLANTATION

JOHN M. ROBERTS, M.D.*

Just as technological advances in medicine have enhanced our capacity to prolong life and reduce suffering, they have also strained our capacity to deal with them intellectually, morally and psychologically. Consequently, what seems "good" at the common sense level, such as the goal of saving lives, can often give rise to conflicted psychological responses at the level of individual decision making. This certainly seems to be true in the case of organ and tissue transplantation where numerous, often conflicting psychological reactions occur, not only in potential donors and their families, but also in transplant recipients and in the healthcare team. These reactions are both pervasive and powerful, affecting each of us as we decide personally whether or not to be donors, and as we deal with our patients in actual transplant situations. Review of these various psychological and psychiatric reactions is, therefore, warranted.

"Organ and Tissue Transplantation" connotes a number of different activities, each with its own psychological processes. Renewable tissues such as blood or bone marrow, and paired organs such as kidneys, or part-organs such as liver lobes, can be donated by living individuals. These donors can be related or unrelated to the recipients. Single organs such as hearts, lungs or pancreas, and tissues such as skin, bone and corneas require post-mortem donation that may either have been designated by the donors prior to their death, or donated by the family of the deceased. Such donors usually do not know the recipients. The differences in these situations can affect the emotional aspects of the donation, both on the part of the donor, and of the recipient.

Human beings do not exist in a vacuum. As individuals, our lives touch and influence the lives, experiences and emotions of others. As a uniquely human endeavor, therefore, organ and tissue transplantation also involves members of the healthcare team such as those making donation requests, families considering such requests, physicians involved in removing the organs or tissues, physicians treating the recipient, and nurses dealing with the post-mortem remains. The psychological responses of these individuals must also be acknowledged in the transplantation process.

Although most people are aware in some general way of modern medicine's ability to transplant organs, and of the potential good such procedures can provide to recipients in terms of quality and length of life, the actual number of people who consent to donation is surprisingly small. Gallup polls of 1983 and 1985 indicate that only 25 to 27 percent of people would be willing to donate their kidneys after their deaths. The reasons given for not donating suggest a number of psychological processes including denial, anxiety, fear and mistrust. Fifteen to 20 percent either said they "did not like to think about dying" or "never really thought about organ donation," suggesting a process of denial. Anxiety was expressed by 16 percent in 1985 who said they "didn't like the idea of somebody cutting me up," and 23 percent feared "they might do something to me before I was really dead." One-fifth (21 percent) of the respondents voiced their mistrust of the physicians who "might hasten my death if they needed my organs."

Despite the expression of these objections, and the fact that only one-fourth of those polled would volunteer their organs, nearly three-fifths indicated they would not mind if someone *else* donated their organs. This suggests that the objections people have are grounded more in their psychological discomfort than in rational, moral, or religious beliefs.[2]

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Individuals who donate while alive vary in their motivations and emotional responses. Those who donate to anonymous recipients tend to be motivated by a sense of altruism or justice. Donation enhances their self-esteem, and in cases of multiple donation (such as repeated blood donors) can even be somewhat euphoric and addictive.[3] Those who donate to family members may be motivated by love, but may also find themselves pressured by feelings of guilt. Potential donors may also find themselves caught between the urgent need of related recipients and their own feelings as well as the wishes of their spouses.[4] Furthermore, those who donate to known recipients may be emotionally tied to the outcome of the procedure to the extent that a transplant failure may lead to profound depression in the donor, and even, in rare cases, to suicide.[5]

These varied responses have led some to question the wisdom of living organ donation (such as a kidney) to a known recipient whether related or not, without prior psychiatric evaluation. These same data suggest that post-donation psychiatric follow-up may also be warranted.

Post-mortem donation can either be accomplished by the donor indicating while still alive a desire to donate, or by the donor's family agreeing to donation at the time of death. Personal prior decision to donate posthumously is limited by the emotional responses of anxiety, fear and mistrust indicated above. There is further evidence to suggest that these responses may be greater in certain ethnic groups such as blacks and Hispanic-Americans. However, education about donation needs and methods helps diminish these emotional responses and improves individual willingness to donate.[6]

Interacting with bereaved families around the death of a loved one is no easy task. Emotional reactions of denial, anger and grief complicate the family's ability to comprehend the situation. Requests for organ donation at that time can seem unnecessarily stressful, inappropriate or even cruel. This is even more the case when the deceased had no prior clear directive of a wish to donate, and when individual opinions in the family members about donation conflict. Often, it is the one family member who is reluctant to donate whose opinion is acted on over the ambivalence or willingness of other family members. It is, therefore, understandable that physicians and hospital staff have been reluctant in making donation requests to families in those circumstances. Recent legislation mandating such requests was not initially helpful, suggesting continued anxiety and ambivalence on the part of physicians and hospital administrators.

Education in techniques that stress organ donation as a means of "helping some good come from a tragic situation" and the use of specially trained personnel from hospital administration rather than physicians in attendance at the death have helped this situation somewhat. Sensitivity to the emotional impact that terms like "ennucleating the eye," "taking the organs," and "harvesting the tissue" have on families has led to phrases like "routine removal of the gift" and an emphasis on the sterile, pain-free aspects of the procedure. Efforts are also made to clarify the family's understanding of brain death, and to provide ongoing communication with the family in the weeks following donation.[7]

Although the Uniform Anatomical Gift Act has given legal weight to the expressed wishes of the donor, the psychological need to recognize the wishes of the grieving family, and perhaps to give them some sense of control in a situation otherwise beyond their control, often leads to a failure to honor the wish of the deceased to donate. Significant questions remain, therefore, as to the degree to which grieving family need to be involved, especially if the deceased had given prior indication of a wish to donate by the completion of a donor card. Families at this time may well be looking for guidance and direction, and a clear indication that it was the wish of the deceased to donate in conjunction with the techniques outlined above is gratefully accepted more often than physicians might think.

Our sense of self develops intimately with our developing bodies. Consequently, much of our psychological understanding of life and personal identity has to do with body integrity, the breath of life, a warm touch, and a beating heart. It is difficult, therefore, to reconcile these deeply held notions with the process of retrieving organs. Medical teams involved in this process may experience anxiety and grief if they do not maintain a focus on the positive, life-giving aspects of their task. Mutual validation and support among team members is important, and no one member, whether surgeon or nurse, should be left alone to do any part of the task unless they are comfortable in so doing. The emotional reaction of the medical team to the donor's body is often the same as to a living person, and it is significant that repeated studies have demonstrated a consistent sense of reverence for the person of the deceased, both in the process of organ retrieval as well as in the care of the body afterwards.[8]

Those dealing with organ donation are not the only ones involved emotionally in the transplantation process, for transplant recipients also experience a range of emotions throughout the process. The initial anxiety of time spent waiting for an organ can progress to feelings of depression and despair. The elation of learning that an appropriate organ is available is tempered by the uncertainty of a surgical procedure and the possibility of a graft rejection. The joy experienced at the chance for a longer and better life may be countered by the guilt the recipient may feel if the donor is a living relative. Culturally held beliefs about body image may lead to emotional reactions of anxiety, depression or even psychosis about having an organ from a donor of a different gender or race.[9]

Post-operative depressions are not uncommon, nor are lingering anxieties about organ failure. These reactions, as well as post-operative deliriums and psychoses, can be amplified by immunosuppressant and analgesic medications. They should be quickly recognized and appropriately dealt with by medication and supportive psychotherapy. Often, psychiatric consultation is needed to facilitate accurate diagnosis and optimal management.[10]

As physicians, we are ethically bound to make use of current technology in the best interest of our patients. The process of organ and tissue transplantation may involve us at many different levels, and we must recognize the emotional effects that it can have on donors, their families, recipients, the health care team, and ourselves. Failure to do so invites failure in the process, depriving many of a longer and better life.

It is not surprising that legislation to enhance procurement has been only minimally successful, for legislation rarely overcomes deeply held feelings and cultural beliefs. It is through education and compassion that we are more likely to succeed, for in that way we address both human intellect and emotion. □

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Editorials

TRANSPLANTATION IN SOUTH CAROLINA

The dream of transplantation is deeply rooted in antiquity. Myths and legends regarding transplantation of organs and tissues appeared as early as the second century B.C. in China, and reappeared in the Middle East in the second century A.D. Records of pedicled grafts for restoration of facial mutilation have been found in Sanskrit texts from the second to third century B.C. in India, and tissue grafting was described in the medieval period in Italy. The more modern history of transplantation, including Nobel Prize winning discoveries, are described in the cover article.

Despite the dramatic successes of transplantation which have saved the lives or restored the health of hundreds of thousands of patients, many important problems remain. Among these are the high cost of some organ transplant procedures, immunologic rejection of grafts (now only partially treatable), and the scarceness of organs for transplantation, which has led to much avoidable suffering and death.

Before the many problems are addressed, it is appropriate to pose some questions: What good does transplantation do? Is it worth its cost in healthcare resources? The answer, simply put, is that transplantation does a great deal of good in relieving suffering and preventing premature death. Its economic and medical costs and benefits are documented elsewhere in this symposium by Evans and by Crumbley and his associates. For example, renal dialysis keeps patients with chronic renal failure alive, but kidney transplantation, compared with dialysis, provides substantially longer survival and better quality of life. The annual cost of supporting a patient after kidney transplantation is also considerably less than maintaining a patient on chronic dialysis. The cost data are less clear for other organs, but it is important to recognize that for other kinds of major organ failure, there are no alternatives like dialysis. There is no artificial heart or artificial liver, for example, that can keep a failing patient alive and functioning indefinitely. For many organ transplant recipients, transplantation is literally a matter of life or death.

Placed in this context, the cost of transplantation can be seen for what it is: a problem that is common to the treatment of cancer, heart disease, trauma, burns, and other catastrophic illnesses. The issue of cost is a problem of public policy regarding allocation of scarce resources that affects the entire range of health care. There is no compelling reason for us to think of the costs of transplantation differently from the way we think of the costs of treatment of many other diseases, like those mentioned above.

In addition, the costs associated with transplantation may not be as high as has been reported. For example, in this issue, Evans reports that the average cost of hospitalization for heart transplant is $131,000 and that related to liver transplantation $180,000. Yet, cost data at M.U.S.C. demonstrate the average cost of hospitalization for heart transplantation to be $69,000, and for liver $71,000. The discrepancy between South Carolina and national data is related in part to improvements in operative techniques that have led to the need for much less postoperative intensive care than was previously necessary. Declining costs of transplantation procedures associated with experience and improving techniques should be kept in mind during discussions of the costs of transplantation.

The major medical problem related to transplantation is immune rejection of foreign grafts. Important progress has been made in controlling the immune response in recent years, as described by Crumbley and his coworkers in this symposium. The use of steroids, azathioprine, and, most recently, cyclosporine, has made management of transplant patients less uncertain than it has been in the past. Long-term surveillance for rejection, however, remains an important cost for such patients, in terms of money as well as personal time, discomfort, and inconvenience.

With current pharmacologic agents and technology, controlling rejection is akin to walking a tightrope without a net: depressing the immune response decreases the risk of rejection, but also increases susceptibility to infection. Leaning too far one way or the other can be fatal.

A major breakthrough in basic research will be required to solve the problem of rejection. Its solution, however, has implications analogous to those of the discovery of antibiotics to treat infectious diseases and the discovery of vaccines to prevent poliomyelitis. The long-term outlook for transplant recipients will be markedly enhanced. The cost of their management will be far lower, because much of the expense of transplantation is related to the prevention, detection, and treatment of rejection. Most importantly, availability will no longer be a problem because it is likely that when the problem of immunologic rejection is solved, xenografts will be as useful as allografts: that is, it should be possible to replace a heart, lung, liver, or any other organ with the needed organ from an animal. Moral problems related to the use of higher primates for cross-species transplantation will cease to exist if animals such as pigs and cows can be used, because they are already an important source of sustenance for human beings all over the world.

If rejection were not a problem, furthermore, indications for transplantation would likely become much broader than they are now, because of low cost, ready availability, and safety. For example, many cardiac diseases are now treated by reconstructions, often using artificial devices, that are associated with many long-term problems, some of which are fatal. How much better it would be simply to replace the diseased organ with a new healthy one! But this will be reasonable only when the risk of a transplant is less than the risk of reconstructive treatment, a situation that will occur when the considerable dangers of rejection and its pharmacologic treatment are no longer present.

At the moment, however, this fundamental high technology does not exist, and it is not possible to predict when a breakthrough might occur. Meanwhile, thousands of people are suffering and dying each year from lack of available organs to replace their diseased parts.

This brings us to the most limiting and vexing problem in the field of transplantation: lack of sufficient donors to supply the needs of potential recipients. In January, 1991, there were 22,327 patients on national waiting lists. As Fitts and Kaye point out in this symposium, a third of these patients, about 7,000, will die without a transplant because of lack of suitable organs. Two thousand of them will die this year alone. In the last few years, the need for organs has increased at a rate of 27 percent per year, yet the rate of donation has not increased. Although kidney, and perhaps in a few cases liver and pancreas, donations may come from living related donors, most solid organ donations come from patients who die by brain death criteria, and still have viable vital organs. Based on the best available data, it is likely that organ procurement organizations are obtaining organs from only about a third of the potential donors in this country.

Some of the ethical problems generated by the scarcity of supply of organs are discussed in this issue by Bell and Saunders and by Rudy and her coauthors. Many innovative approaches to increasing supply have been proposed. They have included permitting sale of organs in an open market, changing the system from our current "opting-in" approach (the patient or the family agrees to donate) to an "opting-out" approach (everyone is assumed to be willing to donate unless a desire not to donate is expressed), and offering a financial incentive (say, $2,000) to families of potential donors. There are many arguments for and against all the proposed systems.

At the root of the donation problem, however, is education. Physicians and the lay public need to understand transplantation better, what it is capable of doing, and what are its consequences. When there is better general understanding of transplantation, it is likely to be clear to most South Carolinians that it is in their own best interest to offer usable organs of loved ones who have recently died for use in transplantation. Because no one knows when he might need an organ transplant, it is in every individual's interest to have a system which makes organs and tissues readily available.

The basic approach, no matter what the system of procurement, should include the following:

1. The lay public needs to be better educated to understand transplantation so individuals may make a reasoned choice of whether or not to donate organs when it is in their power to do so. Our own education as physicians in medical aspects of transplantation—indications, methods, and the long-term needs of transplant recipients—is important to allow us to best serve our patients. This goal is the basic purpose of the current special issue of *The Journal.*

2. Widespread discussion and use of premorbid directives, like living wills and durable powers of attorney, are needed. In a tranquil setting at home, surrounded by family, rather than in the emotionally stressful environment of the hospital, people may consider the circumstances surrounding their own deaths and specify their own desires regarding prolongation of life as well as organ donation. All people over the age of majority should execute such documents, giving expression and power to their own values in controlling events surrounding their own death.

3. An important mechanism to improve levels of donation is to provide the special emotional support families need when a loved one dies. If donation is requested in the context of a supportive environment, a positive response is more likely. Such support can be provided by physicians, nurses, transplant coordinators, clergy, and others. South Carolina Organ Procurement Agency coordinators are available for this kind of help 24 hours a day, and can be reached at any time by calling 803 724-5563. The importance of having dedicated, knowledgeable persons available to help with support of the family at this critical time cannot be overemphasized.

Transplantation has much potential for relieving suffering and saving lives. The people of South Carolina are fortunate to have available a complete range of transplantation services. In the future, the need for organs and tissues for transplantation will not decline, but is likely to continue to expand.

We, the physicians of South Carolina, are in a unique position to aid in optimizing the use of these dramatic techniques by learning when to refer a potential recipient for transplantation and how to participate in their long-term management. We should help to educate our patients in the value of transplantation for themselves and those close to them. We should also keep ourselves well informed so we may participate actively in professional and public debates over the remaining unresolved issues of ethics and public policy relative to transplantation.

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President's Page

THE DEBATE OVER HEALTHCARE COSTS— FIRE OR LIGHT?

The debate over healthcare costs in the United States is getting as hot as a South Carolina summer. We are spending too much on health care. Perception or reality?

Recently our health insurance premiums have increased by 15 to 25 percent per year. Business and industry claim that expensive employee health benefits reduce their competitiveness in the international market. The Medicare Trust Fund faces bankruptcy early in the next century. This year healthcare spending will exceed $650 billion, which is 12 percent of the gross national product. Without major changes in our system, this spending is headed toward 15 percent of GNP by the year 2000.

What are the reasons for the current escalation of healthcare costs in the U.S.? Last year at the annual T.A.P. Conference, Dr. Edward F.X. Hughes of the Northwestern University Center for Health Services and Policy Research gave these ten reasons:

1. *Technology*. New drugs, techniques, and equipment all carry higher price tags. Our profession accepts, and society demands, this new technology before any cost benefit analysis has been done.
2. *Malpractice*. In addition to the cost of liability insurance, defensive medicine is estimated to account for 25 percent of the cost of medical care. With its recent emphasis on "quality," the PRO is further promoting defensive medicine.
3. *Demographics*. An older population uses more medical care.
4. *Epidemiologic vagaries*. AIDS, drug abuse, and trauma are among the current plagues.
5. *Health professional shortages*. The inadequate supply of nurses, physical therapists, cytologists, etc. leads to higher labor costs.
6. *Increased supply of physicians*. More physicians means that more patients have care, including expensive tests, drugs, etc.
7. *Patient expectations*. Our people expect the best care and miraculous results at whatever cost.
8. *Regulations*. HCFA, OSHA, JCAHO, insurance companies, etc. issue their decrees, leading to more paperwork and personnel costs.
9. *The uninsured*. Their medical care tends to be later in the course of the illness and is more expensive. The cost is simply shifted to paying patients.
10. *Hospitals and doctors pay a higher price for the same "goods."* Is this simply because "medical grade" means higher liability costs?

Dr. Hughes' list didn't include excessive profits by doctors, hospitals, pharmaceutical manufacturers, insurance carriers, utilization review companies and medical suppliers.

The problem is complex, and a good solution is not readily apparent. Any major reform must address the causes if it is to be successful.

In a recent report the General Accounting Office concluded that the United States could save money by adopting a Canadian-style national health system. The major savings would result from reduction of paperwork and administrative costs and by rationing care. I am not convinced that any government-sponsored plan would reduce paperwork and administrative costs or that the average citizen is willing to accept rationing of care when he becomes the patient.

As various proposals for reforming our healthcare system are presented, we should ask these questions: Will this system be more efficient, with less waste? Will it address the causes for the rapid rise in cost? Will it insure access for all Americans? Will it preserve the doctor-patient relationship and physician autonomy and freedom? Will it allow us to be good physicians?

J Chris Hawk III MD

J. Chris Hawk, III, M.D.
President

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DELTA HEPATITIS: FIRST CASE IDENTIFIED IN SOUTH CAROLINA*

W. PENN WHITE, M.D.
JAMES N. ARTERBURN, M.D.
WILLIAM H. MARSH, M.D.**

Hepatitis caused by the Delta hepatitis virus (hepatitis D, HDV) was originally described in Italy in 1977. Since that time, this infectious agent has been found to have a worldwide distribution. We present here the first documented case of Delta hepatitis in South Carolina.

CASE REPORT

An 18-year-old white male was admitted to his community hospital for evaluation of a one week history of fatigue, anorexia, nausea and vomiting, and jaundice. Associated manifestations included light stools and "cola" colored urine. He denied fever, sore throat, lymphadenopathy, cough, abdominal pain, diarrhea, hematemesis, melena, or hematochezia.

He reported heavy alcohol intake for more than three years, including over one half pint of liquor and several cans of beer per day. He denied intravenous drug use, acetaminophen ingestion, blood transfusions, homosexuality, or exposure to prostitutes. He worked as a painter in a suburban area.

Initial evaluation revealed an icteric young man, alert and in no distress. No spider angiomata or palmar erythema was present. The liver was 12 cm in span and not reported to be tender. No splenomegaly was noted, and no ascites were present. Neurological exam revealed him to be oriented and without asterixis.

Laboratory values revealed: AST 5420, ALT 3800, prothrombin time 15.0 sec, total bilirubin 12. A drug screen was positive only for tetrahydrocannabinol.

The diagnosis of acute hepatitis was made and the patient was admitted. Further serological testing for causes of hepatitis revealed a positive hepatitis B surface antigen (HBsAg) and a positive IgM antibody to hepatitis B core antigen (IgM anti-HBcAg), indicating acute hepatitis B infection. Studies for hepatitis A and C and HIV were negative.

Over several days, his prothrombin time rose to 26 seconds and his total bilirubin increased to 20. Altered mental status developed characterized by increasing agitation. He was transferred to MUSC for further management.

Upon arrival the patient was confused and combative, but quickly became unresponsive and began to demonstrate decerebrate posturing. Endotracheal intubation was performed to prevent aspiration pneumonia and to allow hyperventilation to lower intracranial pressure. Intravenous mannitol was given. A CT scan of the head was normal. Empirical treatment with a prostaglandin E1 infusion was begun based on preliminary reports of efficacy in fulminant hepatitis.

---

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Chest x-ray done at the onset of a fever spike revealed a left lower lobe pneumonia. Cultures of blood and sputum grew Hemophilus influenzae. In the setting of pneumonia and sepsis, he was not considered a candidate for emergency liver transplantation.

A followup CT scan of the head revealed severe cerebral edema and an occipital infarct. The patient died on day seven from overwhelming sepsis and increased intracranial pressure.

Serum testing for antibody to hepatitis D was positive. This finding, in conjunction with evidence for acute hepatitis B, was diagnostic of coinfection with the two viruses (hepatitis B and D) and represents the first reported case of Delta hepatitis in South Carolina.

DISCUSSION

Hepatitis caused by the Delta hepatitis virus (hepatitis D, HDV), was first reported by Rizzetto et al in 1977.[1] Since that original description, cases have been identified worldwide. Retrospective analysis of stored sera has shown its presence in samples dating back to the 1940s.[2] The etiologic agent is a defective RNA virus which is dependent on simultaneous infection by hepatitis B for its replication and survival. Hepatitis D is the smallest virus known to infect humans. Morphologically, it is similar to viroids or satellite viruses common in plants.[3]

Epidemiologic studies have demonstrated two general patterns of infections in different populations. An endemic pattern is common in regions with a high prevalence of hepatitis B such as the Mediterranean basin, parts of Africa and the Far East. In these areas, viral transmission is felt to occur through close personal contact.[4] In the United States and northern Europe, an epidemic pattern has been described. In these regions, infection is generally confined to intravenous drug users, hemophiliacs, dialysis patients and institutionalized patients.[1,5] Of note, hepatitis D is relatively uncommon among homosexuals and is rarely transmitted vertically from mother to infant.[1,6]

Notable outbreaks of hepatitis D have been reported in Los Angeles, San Francisco, and among intravenous drug abusers and their contacts in Worcester, Massachusetts.[7,8]

As noted, the Delta hepatitis virus depends on the presence of hepatitis B for its replication and survival. Thus, relative to hepatitis B, two patterns of hepatitis D infection occur. The first is coinfection in which hepatitis B and hepatitis D are contracted simultaneously. The second pattern is superinfection, in which case a chronic carrier of hepatitis B is later exposed to hepatitis D. Individuals who have antibody to hepatitis B surface antigen (anti-HBsAg), either from previous infection or following vaccination are immune to hepatitis B and therefore, hepatitis D.[1,3,9]

Compared to hepatitis B infection alone, coinfection with hepatitis B and D produces more serious clinical manifestations and an increased risk of fulminant hepatic failure. A biphasic rise in transaminases has been reported with the second phase being attributed to the hepatitis D. The likelihood for chronicity following coinfection is approximately five percent. Persistence of hepatitis D infection is dependent on the continuing infection with hepatitis B. Thus, if a patient clears hepatitis B, there will be simultaneous clearance of Delta hepatitis. Diagnosis of coinfection is based on the determination of circulating antibody to Delta in the serum in the presence of IgM antibody to hepatitis B core antigen (IgM antiHBcAg) indicating acute infection with hepatitis B.[1,9]

Superinfection of a chronic carrier of hepatitis B with Delta hepatitis has an even more ominous prognosis. In this setting, large numbers of hepatocytes are infected with hepatitis B virus and HDV multiplies rapidly.[3] Clinically, a more severe illness develops. The incidence of fulminant hepatitis approaches 25 to 30 percent with an associated mortality of almost 80 percent. A few individuals will clear both viruses. However, most survivors will develop chronic active hepatitis with rapid progression to cirrhosis and death.[4,7] Of note, hepatocellular carcinoma is unusual in this group.[1] Diagnosis of superinfection is based on a positive anti-Delta antibody in the setting of a positive hepatitis B surface antigen (HBsAg) in the absence of

IgM anti-HBcAg, indicating chronic hepatitis B infection.[1, 10]

As for other forms of acute or fulminant hepatitis, the treatment of acute Delta hepatitis is largely supportive. Major complications include bleeding, infection, renal failure, and cerebral edema with increased intracranial pressure. For chronic disease, corticosteroids and azathioprine have shown little efficacy. Likewise, interferon therapy for chronic hepatitis D has demonstrated only minimal, transient improvement.[6] Orthotopic liver transplantation is an effective treatment for hepatic failure, but a high rate of recurrent infection remains a difficult problem. Considering the difficulties with treatment, the primary emphasis should be on prevention. High risk patients should be vaccinated against hepatitis B, as prevention of this infection also prevents Delta hepatitis.[1, 2]

SUMMARY

Reports now document hepatitis D infection in diverse clinical settings in the United States, indicating that the infection is becoming more common. The demonstration of the first case of Delta hepatitis in South Carolina emphasizes the need for a high index of suspicion for infection by this virus in the evaluation of patients with hepatitis. ☐

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MRI UPDATE

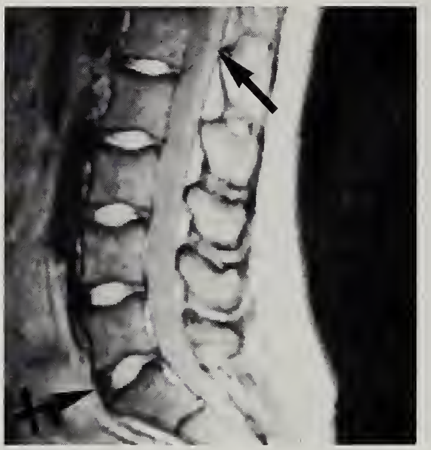

Figure 1

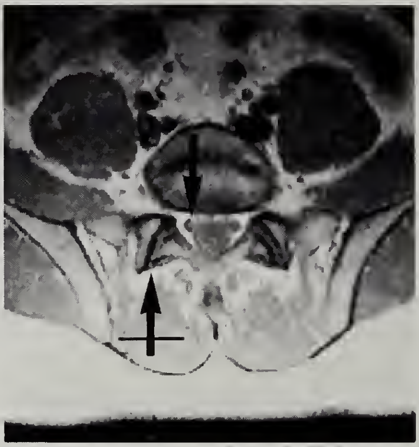

Figure 2

CLINICAL HISTORY: This is a 26-year-old male with back pain and right lower extremity radiation.

FINDINGS: This is an example of a normal study on a young adult. COMMENT: MRI is the screening test of first choice for suspected disorders of the lumbar spine. Notice the clear depiction of the normal L5-S1 disc (figure 1, crossed arrow). The discs of this patient exhibit high signal intensity reflecting normal hydration and none of the discs are narrowed. None of the discs indent the thecal sac which is of intermediate signal intensity and appears as the gray band in the center of the image. The vertebral bodies are homogeneous and free of destructive lesions. The conus medullaris (arrow) is normal. This sagittal image demonstrates the advantages of MRI over other screening modalities. Routine CT scanning will not display the conus medullaris, lesions of which may masquerade as disc herniation. The general area of coverage is superior with MRI. Disc detail is much better displayed with MRI.

The axial image at L5-S1 (figure 2) exhibits delineation of intraspinal detail far superior to that of CT. The right S1 nerve root is clearly displayed (arrow) surrounded by normal perineural fat which is the bright high intensity material in the periphery of the spinal canal. State-of-the-art MR images clearly display the bony anatomy of the lumbar spine including the facet joints (crossed arrow). Degenerative diseases and bony neoplasm are routinely detectable.

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LAPAROSCOPIC EXPLORATION OF THE COMMON DUCT WITH STONE EXTRACTION*

JOSEPH C. McALHANY, JR., M.D.**
ROWENA SIM, M.D.

Over the past year, laparoscopic removal of the gallbladder has become the standard operative procedure for treatment of symptomatic cholelithiasis.[1] As experience with the laparoscopic instruments has increased and specific instruments have been developed, more aggressive laparoscopic intraabdominal procedures have been described (e.g. appendectomy, herniorrhaphy, vagotomy and pyloroplasty). These new operative approaches are justified by the low operative and postoperative morbidity associated with the use of the laparoscope for intraabdominal procedures. The laparoscopic technique avoids transection of the rectus muscle and a prolonged postoperative ileus thus permitting an early return to work and diet.

We have accumulated an experience of over 300 cases of laparoscopic cholecystectomy and a careful clinical evaluation of morbidity and benefit is now in progress.[2] In the process of accumulating this series, we had occasion to perform laparoscopic exploration of the common duct and extraction of an obstructing common duct stone.

CASE REPORT

M.M. is a 34-year-old white female who had a one-week history of intermittent RUQ abdominal pain which radiated to the subscapular area. Her pain was associated with nausea but no emesis. There was no history of fever, chills, or jaundice.

The physical examination of her abdomen was unremarkable. There was no evidence of jaundice on this initial physical examination performed in the office three days prior to operation.

An upper gastrointestinal series had been performed three days prior to the office visit and it was reported as normal. An abdominal ultrasound performed at the same time revealed multiple intraluminal echoes with shadowing, which measured 6mm to 1.5 mm in size.

On the day of operation, her bilirubin was noted to be 3.9mg/dl (0.2-1.2) and her alkaline phosphatase 436IU/l (29-118). The liver enzymes (SGOT and SGPT) were also moderately elevated.

Due to the abnormal laboratory values, it was decided to proceed with the laparoscopic removal of the gallbladder and obtain an intraoperative cholangiogram. The cholangiogram demonstrated obstruction of the distal common bile duct with no other filling defects identified in the hepatic radicles (Figure 1).

A flexible ureteroscope was inserted over a flexible disposable stone basket and through the cystic duct at the opening which had been utilized for insertion of the cholangiogram catheter. Choledochoscopy was accomplished with the ureteroscope and an irregular, yellow-brown, 4-5 mm stone was demonstrated in the distal common duct. There were no other stones detected.

The flexible stone basket was used to grasp the stone but the stone was too large to be removed through the cystic duct opening. In the process of trying to remove the stone, the stone fragmented into two smaller pieces. Each of these stone fragments was grasped with the basket and delivered separately through the cystic duct opening and removed without difficulty.

The ureteroscope was left in place in the cystic duct opening and a cholangiogram was obtained through the irrigation port of the ureteroscope. This x-ray demonstrated no filling defects in the biliary tree and contrast emptied into the duodenum without evidence of obstruction (Figure 2). The flexible scope

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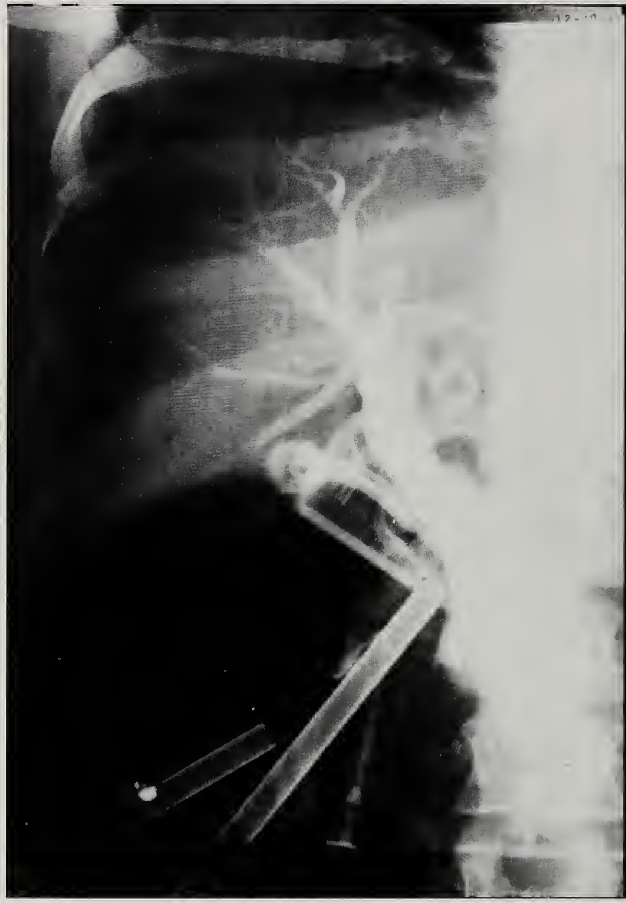

FIGURE 1

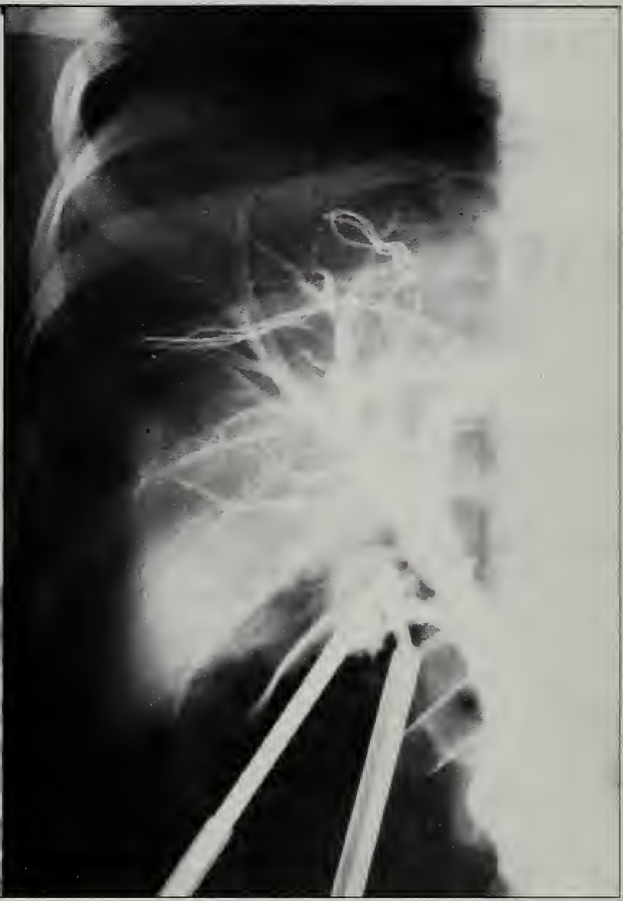

FIGURE 2

was removed and the cystic duct was closed with stainless steel clips.

The cystic artery was identified and doubly clipped and divided. The cystic duct was divided and the gallbladder was dissected from its peritoneal attachments in the standard manner with the electrocautery probe. A round silastic drain tube was inserted through a lateral trocar and positioned in the area of the cystic duct remnant. The drainage tube was anchored to the skin with a silk suture and connected to a closed bulb suction apparatus.

The patient's postoperative course was complicated by moderate bile drainage into the closed suction drainage for 48-72 hours and then the drainage diminished dramatically. The patient was discharged to home on the third postoperative day and the drain was removed one week later in the office. There were no other postoperative problems and she resumed normal activity at home.

A repeat of the liver function tests two weeks postoperative revealed a normal bilirubin (0.5 mg/dl) and an alkaline phosphatase just above normal (208 IU/L). There were no other biochemical abnormalities and the patient was discharged from follow-up.

DISCUSSION

This patient provided an opportunity for us to broaden the clinical use of the laparoscope in treating biliary tract disease. This patient was young and healthy with clinically unsuspected obstruction of the common bile duct.

Our practice has been to evaluate any biochemical or clinical evidence of common bile duct obstruction preoperatively with endoscopic retrograde cholangiopancreatography (ERCP). If a stone is documented in the common duct, an endoscopic sphincterotomy and stone extraction has been performed and the patient allowed to recover prior to the laparoscopic removal of the gallbladder.

However, if biochemical abnormalities are not noted until the day before or the day of operation, the laparoscopic cholecystectomy proceeds and an operative cholangiogram is performed. If common duct stones are detected, two choices have existed. One option was to proceed with the laparoscopic cholecystectomy and perform ERCP and endoscopic sphincterotomy with stone extraction in the immediate postoperative period. The other choice was to convert to an open cholecystectomy and perform common duct exploration and stone extraction in the conventional manner.

This case demonstrates another approach for exploration of the common duct and stone extraction in selected cases.[3,4] The advantages of the laparoscopic approach are decreased postoperative morbidity,[5] when compared with the standard open cholecystectomy and common duct exploration, and the avoidance of another invasive procedure with its own attendant risks, when compared with endoscopic sphincterotomy and stone removal.

The obvious disadvantages of laparoscopic common duct exploration are longer operative and anesthetic times and the potential for a common duct injury, recognized or unrecognized, with a significant increase in short and long term morbidity.[6]

Operative experience with laparoscopic techniques will be the determining factor in the success of this approach. Laparoscopic common duct exploration should not be attempted before a significant experience has been accumulated with laparoscopic cholecystectomy.

The potential for common duct injury will be less with experience and shorter operative times will also evolve.[5] We have witnessed operative times for laparoscopic cholecystectomy decreasing from two hours to the present 30 minutes to one hour as our experience increased.

The early reports of common duct injury that occurred with the use of laparoscopic techniques for cholecystectomy were alarming.[7] These reports dictated a cautious and conservative approach in the performance of laparoscopic cholecystectomy. We have not experienced this complication in our series of cases; however, with laparoscopic cannulation and manipulation of the common duct for stone extraction, the potential for common duct injury is increased. The success of this technique will certainly be influenced by operator experience and clinical judgment.

CONCLUSION

A new technique for operative removal of common duct stones in association with laparoscopic removal of the gallbladder is described. Experience with laparoscopic techniques and sound clinical judgment are necessary to avoid undue immediate and long term postoperative morbidity. ☐

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MANAGEMENT OF FACIAL FRACTURES*

WARREN L. GOULD, M.D.**
RICHARD C. HAGERTY, M.D.

The management of complex facial trauma is rapidly changing. Techniques that were developed in the past to treat complicated congenital deformities are now being applied to facial fractures. Also, the preoperative diagnosis of these injuries has improved dramatically with the introduction of computerized tomography.

With the increase in auto speed limits and our peculiar state laws relating to motorcycle helmets, we are seeing an increase in serious maxillofacial trauma. The principles of early treatment and rigid fixation of fractures have not changed. Resuscitation of the severely traumatized patient requires the coordinated efforts of many specialties quarterbacked by the trauma surgeon. Early mortality in these patients is usually due to shock from severe thoracic or abdominal trauma or to CNS injury. Definitive treatment of the facial fractures can be delayed until the patient is stable. However, after two weeks fibrous union develops at the fracture sites, severely compromising optimum long term results.[1] For this reason early treatment of facial fractures is indicated whenever possible.

Physical examination is of course the first line in the diagnosis of maxillofacial injuries. The physician initially treating the injured patient should be aware that there is a high incidence of associated injuries in the facial fracture patient, particularly when the fractures are due to motor vehicle accidents.[2] These patients frequently have associated abdominal or thoracic trauma. Likewise skull fractures, closed head injuries, and cervical spine injuries are frequently seen. When facial fractures are suspected the best single film to visualize the midface is the Water's view. Further x-ray films should be dictated by the physical exam. Patients with suspected facial fractures should also have a high resolution CT scan. This technique is becoming the imaging technique of choice as it has a high diagnostic yield and a very low false negative rate.[3]

Many options for treatment of complex facial fractures are available. Formerly, treatment was usually with wire fixation of fractured bones coupled with the occasional use of external appliances and splints. This was done on either a subacute or delayed basis. Our treatment of midface fractures emphasizes early anatomic reduction and rigid fixation with mini-plates. The new high-tech plating systems offer many advantages over the old wiring techniques. These represent the greatest single advance in the treatment of facial fractures in recent years. These small, lightweight and high strength plates are molded to fit the contours of the bone and are secured in place with self-tapping screws. After adequate reduction of the fractured bone the high rigidity of these plates allows for excellent fixation and immobilization of the fractures.[4, 5] As they are very low profile they can usually be left in place permanently in the adult patient. In pediatric patients in whom further growth can be expected, the plates are usually removed after a few months.

Prior to plating, all fractures are visualized and adequately reduced. A variety of incisions can be used for exposure of these fractures including coronal, buccal sulcus, subciliary and subconjunctival incisions which have been adapted from use in craniofacial surgery. The entire facial skeleton can be exposed through incisions which are easily camouflaged after they have healed.

The principles of management of facial fractures include reconstruction of the facial complex and proper attachment to the cranial vault. Proper dental occlusion is of primary importance. Mandibular fractures are therefore treated first; and where tooth-bearing bones are involved, the occlusion is restored with maxillo-mandibular fixation. Fractures are then reduced anatomically prior to rigid fixation. The use of mini-plates can usually reduce the period of having the jaws wired to a few weeks. Areas of bone loss can be reconstructed using split thickness cranial bone which is harvested from the outer table of the parieto-occipital skull.[6] Tracheostomy is required only when prolonged intubation is necessary or when nasal intubation is contraindicated; but it may be advisable in multiple complex fractures of the midface and mandible.[7]

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The following are two representative cases which have been treated in the past year.

Case number 1:
RN is a 17-year-old male who was assaulted and sustained blunt trauma to the left malar eminence. On admission he was noted to have marked facial asymmetry with flattening of the left cheek bone. CT scan confirmed the plane film diagnosis of a depressed and comminuted tri-malar fracture. (formerly known as a "tripod" fracture) Ophthalmology consultation confirmed that there was no injury to the globe. The patient was taken to the Operating Suite several hours after admission where he underwent open reduction and internal fixation of the fracture utilizing mini-plates. Access was gained through an upper blepharoplasty incision, subciliary incision, and an upper buccal sulcus incision. Exploration of the orbital floor revealed a severely comminuted orbital floor fracture with loss of support of the orbital contents. This was reconstructed with a split thickness cranial bone graft harvested from the outer table of the pareito-occipital skull. The patient was discharged to home on postoperative day number two.

Case number 2:
Patient VJ was involved in a motor vehicle accident. She sustained multiple injuries including a left pneumothorax, multiple pelvic fractures, right tibia/fibula fracture and a Grade III closed head injury (CT scan showed hemorrhage in the white matter of the left periventricular region). She had multiple facial injuries including a parasymphyseal fracture of the mandible and bilateral Le Fort I and II midfacial fractures. After the patient's initial condition had stabilized, she underwent open reduction and internal fixation of her fractures on the tenth day of her hospitalization. At this point she was still in a coma from her closed head injury; but it was felt important to treat these fractures before a fibrous union developed. The patient recovered from her closed head injury. She was discharged home from the hospital

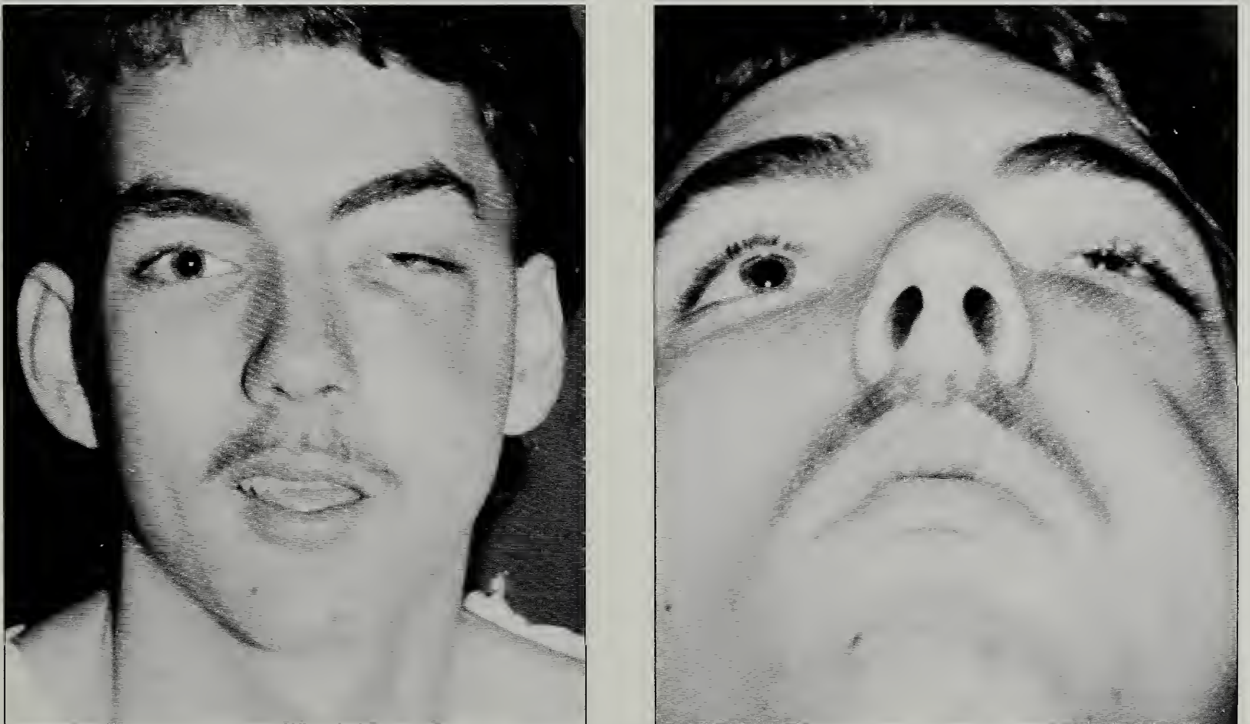

FIGURE 1A & B: Left trimalar fracture showing flattening of the left cheek bone and enopthalmos.

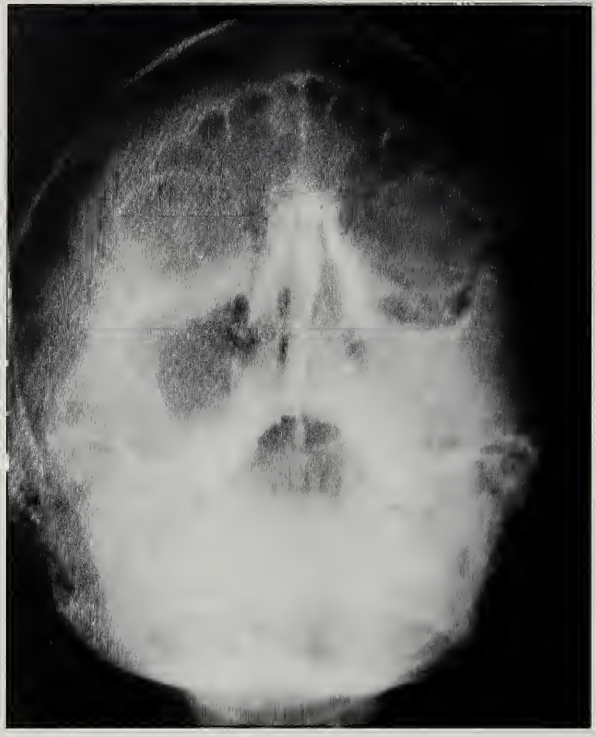

FIGURE 2. Water's view x-ray showing opacification of the left maxillary sinus.

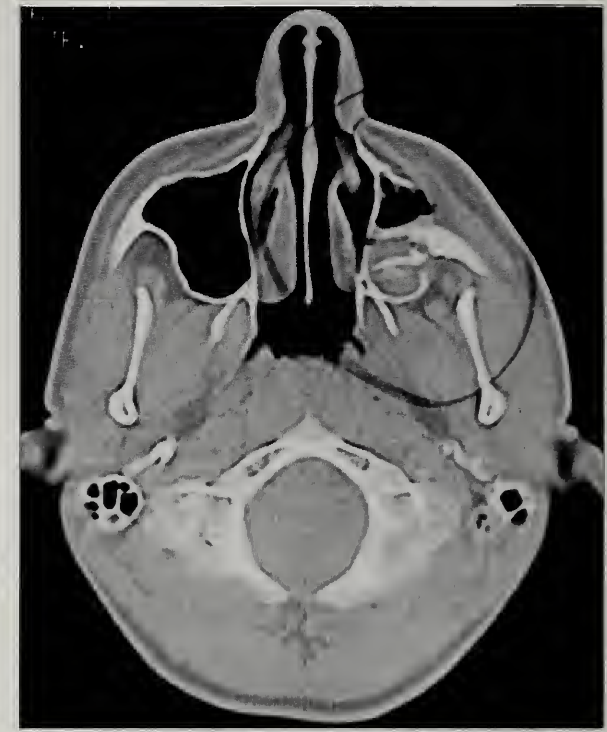

FIGURE 3: CT scan confirming a depressed and comminuted fracture.

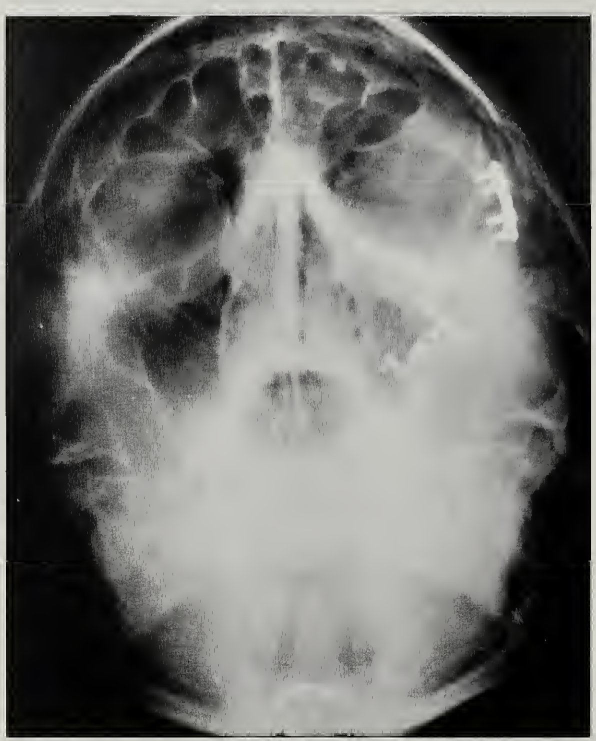

FIGURE 4: X-ray after reduction and rigid fixation with miniplates and cranial bone graft to the orbital floor.

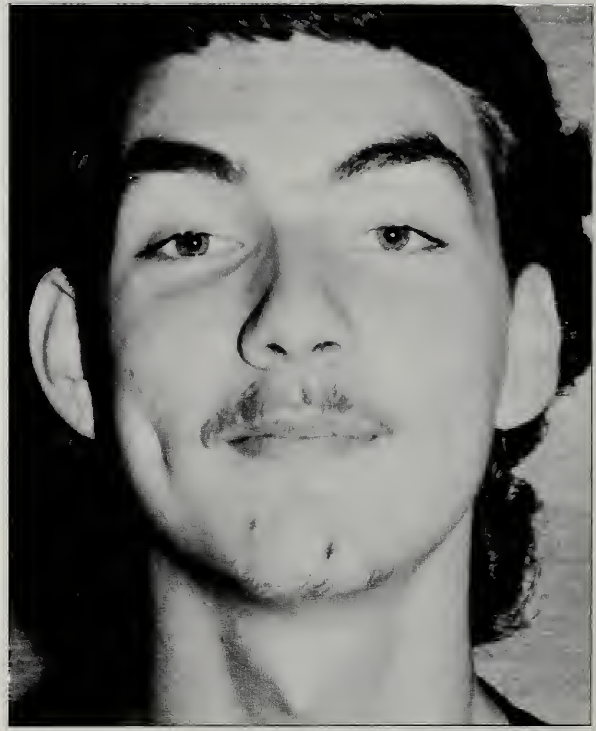

FIGURE 5: One year post-operative result showing excellent facial symmetry and lasting correction of enopthalmos without visible scars.

about four weeks after admission. She has undergone further hospitalization on a rehabilitation unit and is now able to function independently.

Potential complications of the treatment of these complex facial injuries include infection, malunion, malocclusion and loss of bone graft. Fortunately these problems are uncommon when the aforementioned basic principles are adhered to. Early treatment of these injuries, in addition to shortening hospital stays and allowing for earlier rehabilitation, seems to actually reduce the incidence of complications. Secondary correction of malocclusion, facial asymmetry, or enophthalmos is extremely difficult and will often require complex orthodontics or even secondary surgical intervention.

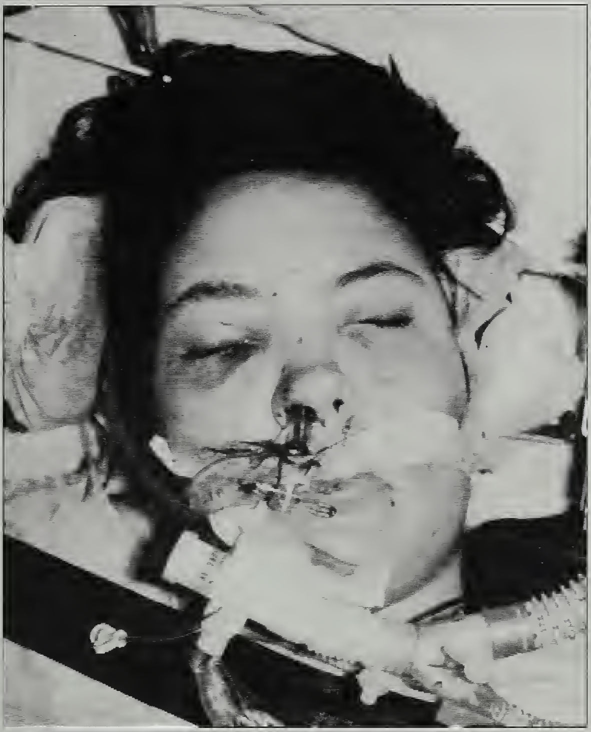

FIGURE 6: Bilateral Lefort I and II midface fractures and mandibular fracture following a high speed motor vehicle accident.

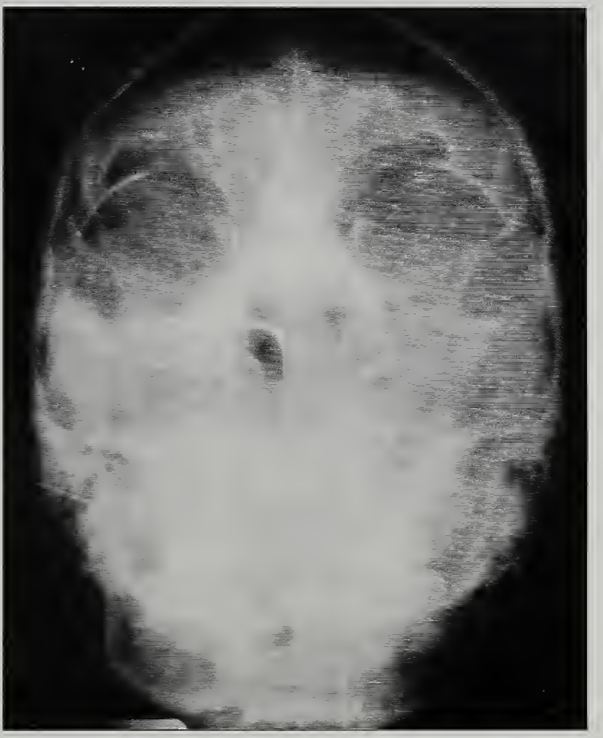

FIGURE 7: The plane film x-rays visualizes the fractures poorly.

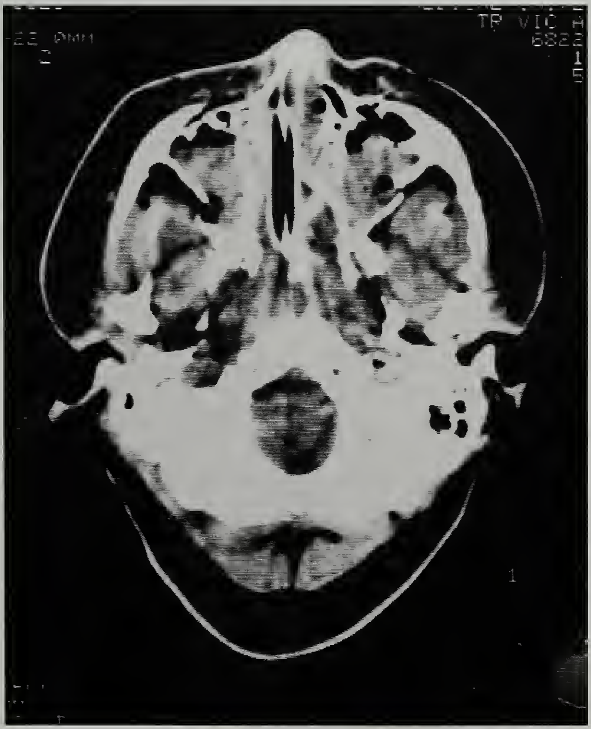

FIGURE 8: CT scan showing bilateral maxillary fractures.

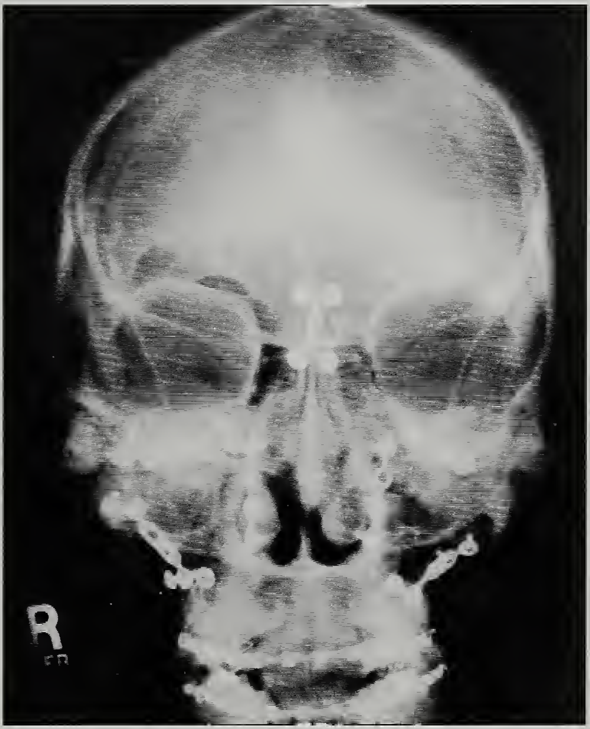

FIGURE 9: X-ray following reduction and rigid fixation with miniplates (mandibular plate not seen).

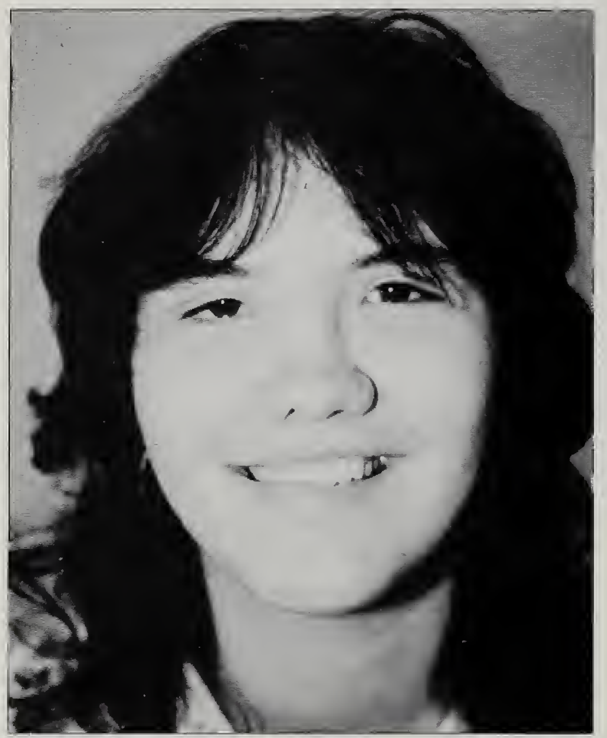

FIGURE 10: Ten months post-operative result showing good facial symmetry.

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SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION
Joy Drennen, Editor
798-6207, in Columbia
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JULY 1991

MEDICARE UPDATE

SCMA/AMA Campaign Against Proposed HCFA Implementation of Medicare Payment Reform

The physicians of America are outraged by HCFA's proposed cuts in the new Medicare payment system that go into effect next year. That's the message AMA EVP James S. Todd, MD, gave June 10 in a statement to the Physician Payment Review Commission.

HCFA has announced that it will reduce the initial conversion factor by 16 percent below originally projected levels. The conversion factor will be used in conjunction with a resource-based relative value scale to determine physician payments. Payments to physicians whose services consist mostly of visits, such as internists and family physicians, may increase next year, but at a substantially lower level than had been expected. Payments to physicians whose services consist mostly of procedures, such as surgeons, will be reduced even further below anticipated levels by 1996. "Physicians can only conclude that the federal government has broken faith with the medical profession and its patients," Dr. Todd said. The AMA, as well as leaders in the specialties of internal medicine, family practice and surgery all agreed that restoring the conversion factor to its intended level is the No. 1 priority. "The AMA remains committed to physician payment reform," Dr. Todd told the PPRC. "We simply want to make it work."

In a letter to the SC Congressional delegation, SCMA President Chris Hawk, MD, wrote "The SCMA asks you to support the AMA's proposed amendment in order to return Medicare reform of physician payment back to the budget neutral basis which Congress intended."

In addition, the AMA and SCMA are asking each member to write his or her legislators asking for their support. You should have received a packet of information from the SCMA recently which included background facts and sample letters . **It is vital that our Congressional delegation hear from you.**

What Medicare Payment Reform will do to your Medicare Payments

For physicians, the proposed new Medicare payment schedule is the most significant change in the program's 25-year history. It would:

* Base payment on a resource-based relative value scale developed at Harvard University.

* Hold 1996 Medicare spending to at least $3 billion less than if there had been no RBRVS.

* Reduce 1996 payments per service for all but family and general physicians, who would see average gains of about 15 percent. Medicare officials say rural doctors also would benefit.

* Adjust the national rate for geographic variations in practice costs, liability premiums and part of earnings. Rates will vary from about 85 to 115 percent of the national average. Retain

current Medicare payment localities except in Nebraska and Oklahoma, which move to statewide prices.

* Base payment for visits and consultations on new codes developed by the AMA. Beginning in October require carriers and physicians to use a uniform global surgical package.

* Limit Medicare drug payment to 85 percent of the average wholesale price or possibly less for some high-volume drugs. End separate payment for injections during visits except for some chemotherapy.

* Fold the interpretation of an EKG into the visit price.

* Eliminate time as a factor in payment for anesthesiology.

* Pay about 80 percent of the usual price when a service typically performed in the office is done in a hospital outpatient setting instead.

Information specific to SC will be provided in the August SCMA Newsletter. In addition, Medicare will be sending out a comprehensive package on Physician Payment Reform. It will arrive on special light blue stationary. Be on the lookout for this very important packet. Medicare will sponsor a series of workshops in late summer regarding Physician Payment Reform. The SCMA is also working with BC/BS of SC in planning coding and other workshops. Watch your Medicare bulletins and this newsletter for times and places.

Electronic Claims Filing

Physicians need to evaluate the applicability for having electronic claims filing for their offices. If the budget cuts get through Congress for 1992, Electronic Media Claims (EMC) will take priority over hard copy claims.

Routine Waiver of Copayments or Deductibles under Medicare Part B

A provider, practitioner or supplier who routinely waives Medicare copayments or deductibles is misstating the actual charge. In certain cases, a provider, practitioner or supplier who routinely waives Medicare copayments or deductibles also could be held liable under the Medicare and Medicaid anti-kickback statute. This statute makes it illegal to offer, pay, solicit or receive anything of value as inducement to generate business payable by Medicare or Medicaid. When providers, practitioners or suppliers forgive financial obligations for reasons other than genuine financial hardship of the particular patient, they may be unlawfully inducing that patient to purchase items or services from them.

Medicare Professional Relations

The Medicare Professional Relations Staff is available to assist with provider education, problem claims or other Medicare questions. Routine claims inquiries should be directed to the Medicare Provider Service Center. However, the representatives are available to provide assistance with problem issues which have not been resolved satisfactorily through the provider services. Since the Professional Relations Representatives are routinely out of the office, the issues that are routed to them must be limited to problem issues. In an effort to keep the physicians abreast of the forthcoming changes in Medicare policy, the Professional Relations Representatives conduct workshops throughout the state. They are also available to make on-site visits to the physicians' offices to assist with Medicare issues.

The state has been separated into four specific areas and a Professional Relations Representative has been assigned to each area. *If you would like to schedule a visit with the representative for your area, you may contact Barbara Sauls in Columbia at 754-1968, extension 5886.*

Direct Medicare questions to Cindy Osborn or Barbara Whittaker at SCMA Headquarters.

MEDICAID UPDATE

Clarification of Norplant Policy

Effective on or after April 1, 1991, the State Health and Human Services Finance Commission (SHHSFC) sponsors coverage of the Norplant method of contraception.

Physicians may bill for the education of the patient under one of the family planning codes (FP). Physicians may bill for FP instruction under code S0041 which reimburses $7.00 ***or*** FP counselling under code S0040 which reimburses $20.00. Refer to the December, 1989 Medicaid Bulletin for a description of both FP codes. For the cost of the Norplant, physicians bill procedure code S0097. An invoice showing the cost of the Norplant must be attached to the claim. Norplant claims will be manually priced to insure the physician's cost for the Norplant is covered. For the insertion of the Norplant, physicians bill procedure code S0098 which reimburses $75.00. In addition, physicians are permitted to bill for a postpartum visit ***or*** the appropriate level office visit code, and the anesthetic injection. Any claims billed with the original Norplant billing instructions will be changed to the revised billing guidelines. *Questions should be directed to David Jernigan or Chris Ricken at 253-6140 in Columbia..*

Pharmaceuticals Must be Rebated for Medicaid Coverage

Physicians are reminded that legislation set forth by OBRA 1990 regarding the requirement of rebate agreements for Medicaid coverage of pharmaceuticals remains in effect. Any pharmaceutical for which the manufacturer has not signed a rebate agreement with the Health Care Financing Administration (HCFA) is not reimbursable by the Medicaid program. The SHHSFC mailed a Medicaid Bulletin, accompanied by a list of participating companies, to all Medicaid-enrolled physicians in March of this year.

Current rebate agreement information may be obtained by contacting the Department of Pharmaceutical Services, SHHSFC, in Columbia at 253-6179.

SIXTH ANNUAL PRACTICE OPPORTUNITIES FAIR

The SC Area Health Education Consortium (SC AHEC) will sponsor its 6th Annual Practice Opportunities Fair August 23-24 in Columbia. The Fair is designed to help residents identify and evaluate practice opportunities throughout the state. Residents from all of the state's teaching hospitals (and graduates of MUSC and USC in out-of-state residency programs) visit with representatives of various hospitals and communities to discuss locations, costs and assistance in establishing a practice in SC. SC AHEC offers free placement services to physicians and to those hospitals and communities who would like to list opportunities.

To register for the Fair, please call Mary Chesshire at 792-9422 or Becky Seignious at 792-4439, both in Charleston.

AIDS CLINICAL TRAINING PROGRAM

The SC AIDS Training Network announces the availability of four one-day clinical tutorials for providers of primary care to patients with HIV/AIDS.

The tutorials are scheduled for August 15 and October 28, 1991, and February 13 and April 16, 1992. Conducted by Bosko Postic, MD, and Charles S. Bryan, MD, the tutorials are limited to four healthcare providers per tutorial.

For more information, please call or write Melanie VanSant, RN, Assistant Project Director, SC AIDS Training Network, School of Public Health, University of South Carolina, Columbia 29208, 777-4845 .

HIV INSURANCE AVAILABLE

Physicians who face the risk of occupational exposure to HIV will now be able to obtain insurance protection for that risk through the American Medical Association's AMA Insurance Agency, Inc.

The AMA plan will pay a lump sum benefit immediately after an insured physician tests positive for HIV infection. Benefits offer payments from $150,000 to $500,000 for practicing physicians. Residents can apply for $150,000 or $250,000 in coverage while medical students can obtain $50,000 in coverage.

Premiums are based on the benefit level selected and are not tied to age, sex, location or specialty. Annual premiums for practicing physicians choosing the $500,000 benefit level will average $900 to $1,000. Coverage and premiums are guaranteed for five years following the effective date of coverage.

The insurance will be available in a ten-state test market this summer with full national availability by the end of this year.

FROM THE OFFICE OF LEGAL AFFAIRS

Amendments to Death with Dignity Act Signed by Governor

On June 12, 1991, Governor Campbell signed legislation enabling citizens who execute living wills to make specific provisions in these documents directing that artificial nutrition and hydration be withdrawn under certain circumstances.

Under former law, artificial nutrition and hydration were specifically excluded as "life-sustaining procedures" and it was doubtful if these measures could be withdrawn from a patient, even if the patient had a living will.

The next provisions allow the maker of a living will to designate on the living will form if they do not want to continue to receive artificial nutrition and hydration in the event they are diagnosed as being in a state of "permanent unconsciousness," or a persistent vegetative state.

The living will form is being reprinted. *If you would like a copy of the new law and form, contact Steve Williams at the SCMA.*

HYPONATREMIA: DANGERS OF TREATMENT*

STONEY A. ABERCROMBIE, M.D.**

Rapid correction of hyponatremia can result in neurological deterioration due to myelinolysis in the central pons and extrapontine territories of the brain. Significant neurological sequela, including death, may result.

CASE REPORT

A 49-year-old white female with a history of chronic alcohol abuse, was admitted on January 26, 1989. Having fallen multiple times and showing mental slowing and incoordination for two weeks, the patient presented to the Emergency Department with facial trauma after striking her right eye on a sink.

The family stated that she usually drank up to one case of beer each day for the past 25 years. Her alcohol intake had increased during the past several months. Unable to obtain beer, she had resorted to using one to two cans per week of Aqua Net Hair Spray.

She had a 15-year history of hypertension for which she received Reserpine-Chlorothiazide. She had an uneventful review of systems except for the alcohol consumption and smoking one pack of cigarettes per day for 25 years.

The only complaint by the patient was increased thirst. She had been on a low salt diet with ingestion of large amounts of water to correct her "dark urine."

Initial evaluation revealed an unkempt female who appeared older than her stated age. Vital signs were BP 100/70, P=80, R=20, T=97.8. She was alert and oriented. Cranial nerves were intact. She moved all extremities with good sensation noted. A large hematoma was on her right forehead with an associated right subconjunctival hematoma. Visual acuity was 20/40/L and 20/70/R with normal slit lamp. Examination of the heart and lungs was normal. The liver palpated to 6cm.

The stool tested negative for blood. There were multiple contusions on her back, hip and legs. A CT Scan of the head did not reveal any bleeding or infarction.[1-2] Skull films were normal.

Initial lab values are listed in Table I. A blood alcohol level upon admission was 0% and urine drug screen was negative. Blood volatile levels were negative. SGOT was 98 U/L. The serum and calculated osmolality were 226 with an anion gap of 7.2. PT, PTT, and platelets were normal. Hepatitis B Surface Antigen and Human Immunodeficiency Virus tests were negative. Serum ammonia level was normal at 32 umol/L.

Urine studies are shown in Table II. The urine culture and sensitivity grew out Proteus Mirabilis for which the patient was treated. Spinal fluid examination was reported as normal.

Preliminary diagnoses were hyponatremia, hypokalemia, alcohol abuse and mental status changes. An intravenous solution of D_5NS with 40mEq KC1 was started at 200cc/hr. for four hours and then continued at 75cc/hr. She was treated with thiamine and multi-vitamins. Alcoholic withdrawal prophylaxis was accomplished with chlordiazepoxide and lorazepam. Fluid restriction of 500 cc per 24 hours was ordered.

On 1/29/89, the patient was noted to be somnolent but arousable. A repeat CT Scan of the head remained normal. By 1/31/89, the patient was more alert with normal lab values. Alcohol rehabilitation plans were made. Her hypertension was treated with 240mg of sustained release verapamil every day.

On 2/2/89, she became acutely somnolent with diaphoresis and increased mucus production. A repeat CXR revealed no acute changes. Arterial blood gases were pH 7.40, pCO 40; po 64.9 on room air. A ventilation-perfusion lung scan was normal.

The patient moved all extremities but had poor coordination. She looked to the left. She had brisk deep tendon reflexes with bilateral withdrawal response to plantar stimulation. Her upper extremities were partially flexed and adducted. She developed bilateral hori-

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*From Self Memorial Hospital, Greenwood, S.C.

**Address correspondence to Dr. Abercrombie at 160 Academy Avenue, Greenwood, S.C. 29646.

TABLE I

INITIAL LAB VALUES OF CASE STUDY

DATE/TIME:		*1/26—15:25*	*20:35*	*1/27—07:25*	*06:20*	*1/28—06:30*	*1/31*
Na+	(135-145)	109	112	118	127	132	134
K+	(3.8-5.1)	2.4	2.5	2.4	2.5	3.4	5.2
Cl-	(96-106)	69	74	81	90	96	99
CO	(22-30)	33	32	26	31	27	28
Glucose	(60-110)	115	165	102	110	93	104
BUN		18	14	14	14	12	14
CR		0.7	0.7	0.6	0.7	0.5	0.5

zontal nystagmus on lateral gaze. She became markedly obtunded with a tendency toward decorticate posturing consistent with symmetrical spastic quadriparesis. She became dysarthric with decreased swallowing capabilities consistent with pseudobulbar palsy. EEG showed marked toxic or metabolic encephalitis. Nerve conduction studies of the upper extremities were normal. BAER's of the left ear were normal. BAER's of the right ear showed no identifiable wave forms beyond wave I even at 85 to 95 decibel intensity stimulation. Consideration of Werniche encephalopathy and Korsakoff psychosis was enteraimed. All sedatives were stopped. The patient began a slow march toward improvement.

TABLE II

INITIAL URINE STUDIES OF CASE STUDY

DATE:			*1/26*	*1/27*	*2/21*
URINE		mOSm	198	567	802
Na+	(40-220)	mmol/L	<10	195	176
K+	(25-150)	mmol/L	8.7	34	44
Cl	(110-250)	mmol/L	10	239	154
Glu	(1-15)	mg/dl	3	4	31
CR	(10-400)	mg/dl	38	83	98

The patient was suspected of having central pontine myelinolysis (CPM) secondary to the rapid correction of the hyponatremia. A transfer to a tertiary care center for Magnetic Resonance Imaging was initiated. However, the patient continued to deteriorate and during a subclavian catheter insertion for Total Parental Nutrition (TPN) and treatment of pneumonia, a pneumothorax was encountered. The patient was transferred to the intensive care unit and after an extended stay, improved enough for discharge home.

Outpatient follow-up of three months' duration demonstrated continued improvement. She was able to care for herself and home health services were discontinued. Unfortunately, she did not get an MRI to radiographically diagnose her condition as CPM. MRI may demonstrate a radiolucent defect within the pons even when the computed tomography fails to reveal any pontine abnormality.[4] CT and MRI may be negative for a month after the osmotic insult. Although various imaging techniques (CT and MRI) may be confirmatory, positive diagnostic tests are not essential to diagnose CPM. If pseudobulbar palsy and limb paralysis gradually develop after correcting hyponatremia, the clinician should strongly suspect a demyelinating lesion of the pons.[5]

DISCUSSION

Central pontine myelinolysis is a symmetrical focus of myelin destruction at the center of the basal pons induced by the rapid correction of hyponatremia as first described in 1959 by Adams, Victor and Mascall.[6] Their four patients were noted at autopsy to have a symmetrical lesion in the center of the pons. Microscopic examination revealed myelin loss, almost intact axons and neurons with little inflammation.[6] In 1979, Wright, Laurens and Victor demonstrated that extrapontine lesions affecting the thalamus, internal capsule, cerebellum, lower levels of the cerebral cortex and adjacent white matter occurred in approximately 10 percent of CPM patients. Extrapontine myelinolysis occurs rarely in man without a pontine lesion.[7]

Initially, CPM was considered a nutritional disease as most patients were alcoholic or malnourished.[6] However, abnormalities of serum sodium were later recognized as the typical clinical setting for CPM. Pontine and extrapontine myelinolysis have been described in patients with hyponatremia of diverse causes, including diuretic-induced, hyperemesis gravidarum,[8] post-operative[3] and prolonged gastroenteritis. CPM has been shown to occur in non-alcoholic healthy patients as well as malnourished alcoholics.[8]

Hyponatremia causes a generalized metabolic encephalopathy which may present as headache, nausea, vomiting, irritability, restlessness, lethargy, confusion, weakness, malaise, and seizures. Symptoms are most common with a serum sodium concentration <125 mEq/L and are more severe if the serum sodium drops precipitously causing cerebral edema.

Recently there have been conflicting reports in the literature about the cause of CPM.[3, 5, 12, 13, 14] Despite adequate evidence, the concept that uncorrected hyponatremia could itself lead to CPM has persisted. If uncorrected hyponatremia itself were responsible for neurologic sequelae, one would expect patients in whom decreased sodium was corrected slowly to fare less well than those in whom decreased sodium is more rapidly corected. The opposite is true. Patients whose serum sodium concentration was increased by less than 12mEq/L per day (0.5mEq/L/hr) had uncomplicated courses.[5] In actuality, there has not been a demonstrated specific neuropathological lesion associated with decreased sodium or hyponatremic encephalopathy. Controlled studies in three species have shown myelinolysis following rapidly corrected hyponatremia but not with uncorrected hyponatremia. It has been suggested that over-correction of hyponatremia was the cause of CPM. Yet human cases and animal studies clearly show that over-correction is not the only factor. Rapid correction to mildly hyponatremic levels in animals can induce myelinolysis. Human case reports confirm this fact.[9, 10]

The question remains, how fast an increase in serum sodium is safe? Sterns, et al. reported that a rise >12 mEq/L per day carries the danger of myelinolysis.[5] Our patient had a rise of 18 mEq/L in 24 hours. A differential diagnosis between acute and chronic hyponatremia is important.[12, 13] Acute hyponatremia is classified as a decrease of serum sodium exceeding 0.5 mEq/L/hr. If this information is unknown, hyponatremia can be assumed to be acute if onset was within two to three days or there have been large quantities of oral or intravenous hypotonic fluids in the presence of impaired water excretion. In other cases, chronic hyponatremia is likely. Acute hyponatremia should be corrected immediately and rapidly to mildly hyponatremia levels, at a rate in excess of 1mEq/L/hr (1mmol/L/hr) to prevent severe morbidity and mortality. Chronic hyponatremia should be corrected slower.[12, 13] Even a rate of correction equal to 0.5mEq/L/hr can be harmful if continued for several days.[5]

A major problem for the physician in the management of hyponatremia is the therapist's inability to control the rise in serum sodium accurately. The administration of an amount of hypertonic saline carefully calculated to raise the sodium to mildly hyponatremic levels could result in a final serum sodium in the normonatremic, or even hypernatremic range.

When confronted with a hyponatremic patient, the physician must weigh the risks of hyponatremia against those of too rapid correction. Without seizures, conservative measures such as water restriction (800-1000 cc per day) and discontinuation of diuretics will allow the serum sodium to rise slowly.[11] With convulsions, saline should be prescribed in 100 cc bottles to avoid any possibility of accidental infusion of a large volume. Saline treatment should be reassessed as the seizures cease and the patient is stable. Frequent monitoring of serum sodium is essential.

CONCLUSION

The neurologic complications in our patient were considered to be the result of well-intentioned efforts to correct the hyponatremia. It therefore appears that CPM may well be an iatrogenic disease. Rapid correction of chronic hyponatremia presents no significant advantage. As a matter of fact, there is considerable evidence that the treatment may be dangerous. Caution must be displayed when one is faced with a patient with hyponatremia. Slow correction of chronic hyponatremia appears to be the treatment of choice.

SUMMARY

Hyponatremia is a common clinical diagnosis. Rapid correction may result in neurological deterioration due to myelinolysis in the central pons and extrapontine areas of the brain. Rapid correction may result in serious neurological sequela, including death and has no significant advantage. Slow correction of chronic hyponatremia appears to be the treatment of choice. ☐

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THE ANNUAL MEETING OF THE AMA
REPORT OF THE SCMA DELEGATION

DONALD G. KILGORE, JR., M.D.*

This report of the Annual Meeting of the American Medical Association, held in Chicago, Illinois from June 21st to June 27th, 1991, will attempt to summarize the events which took place. For more extensive information, the July issues of AM News will contain considerably more details. The Chairman of the Delegation, Dr. Randy Smoak, was occupied fully by his campaign for the AMA Board of Trustees, and I am filling in because of this.

OVERVIEW OF THE MEETING

The House of Delegates considered an incredible amount of business. Two hundred and sixty-two resolutions and 107 reports from the Board of Trustees and the various councils were considered by nine reference committees. The House adopted policy on a bewildering variety of national issues of critical importance to our patients and practicing physicians alike.

Four hundred and thirty-eight delegates were seated, of which 348 represented state medical associations, 77 represented national medical specialty societies, and 10 delegates represented medical students, resident physicians, hospital medical staffs, medical school young physicians, the military services, the public health services, and the Veterans' Administrations. During the meeting, four more national specialty societies were admitted - the American Medical Director's Association, the Society of Cardiovascular and Interventional Radiology, the Society of Critical Care Medicine, and the American Orthopaedic Foot and Ankle Society. This made a grand total of 81 national specialty societies and a total of 442 delegates. Considerable concern was expressed over the growth of the House of Delegates in the past decade; the number of delegates has almost doubled. Some of this growth has come from increased membership in state medical associations, but by far the greatest growth has come from the increased representation of the national specialty societies. The Board of Trustees was directed to bring back a report suggesting a method of limiting further growth of the House of Delegates to a size that would be practical.

OUTSIDE SPEAKERS

On Sunday afternoon, Health and Human Services Secretary Louis Sullivan addressed the House of Delegates at the opening of the Annual Meeting. He stated that Americans will push harder for nationalized health insurance unless doctors curb soaring costs and improve the availability of care. "Unless we act now to meet these goals we could find ourselves with a critical mass of ourcitizens demanding a total government takeover of health care. I doubt that many in this room today would welcome that development. As Americans, as well as physicians, we must be concerned that consuming ever larger portions of the gross national product on health care necessarily diverts resources from other good uses - for example, increased wages, savings, capital investment, research and development, and other services such as drug rehabilitation, foster care, and family support."Sullivan said that health care accounted for 12 percent of the gross national product las year or about $2,500 for every man, woman and child, which he stated was the highest in the world. Sullivan also called for increased emphasis on individuals accepting responsibility for their own health, including curtailing sexual practices that spread AIDS.

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On Monday morning the House heard an address by Vice President Dan Quayle, which was very reassuring, provided that the national leadership follows through on all that he promised. Vice President Quayle stated that national health care would be a disaster and that some relief must be found for the professional liability crisis which is a prominent factor in the high cost of medical care and prescription drugs. He also promised that the FDA would accelerate its testing of new drugs so that the American people could enjoy the benefits of these medications as soon as many European countries do. He also stated that he believed in mandatory testing for AIDS.

Another outside speaker who was not so distinguished interrupted Vice President Quayle about two minutes into his speech shouting "People with AIDS need national health insurance." This phrase was repeated approximately 20 times before the protest or was ejected from the hall, and Vice President Quayle could resume his speech. These rather unwelcome visitors were members of ACTUP (AIDS Coalition to Unleash Power). Physicians and their wives were warned not to wear the convention badges outside the hotel. A few who disregarded this warning found their clothes covered with red spray paint. In fact, as I left the hotel for the airport Thursday afternoon, workers were still trying to clean some of this red spray paint off the front of the Chicago Hilton. On advice of counsel, the Board of Trustees agreed that a representative from ACTUP give limited testimony before Reference Committee D. No other incidents took place within the hotel.

ADDRESS OF THE PRESIDENT

Dr. C. John Tupper, the AMA President, gave an address which he entitled "A Legacy of Hope." He stated that in contrast to the 80's being the "me" decade, it is very likely that the 90's will be known as the "we" decade, with the medical community providing the leadership. Dr. Tupper pointed out that because of the hard work of AMA physicians and members of the auxiliary, the American Medical Association Education and Research Foundation raised 2.4 million dollars for medical schools - an increase of 20 percent over last year.

Dr. Tupper reaffirmed his faith that the practice of medicine is the greatest of all callings. Despite constraints of government, the legal hindrances, and other discouraging factors, the practice of medicine continues to become more challenging and exciting every year.

Dr. Tupper pointed out the progress in providing compassionate health care for all Americans. He stated that last year health care was a sleeper on the national agenda and that the American Medical Association was often labeled reactionary by the press. Because of our leadership in Health Access America we are being called leaders in editorials from coast to coast. Even the president of the AFL-CIO has praised publicly the efforts of the American Medical Association. During the past year the leaders of the American Medical Association have held meetings with corporate executives and private organizations, provided testimony at Congressional hearings, provided significant input into the results of the Pepper and Steelman Commissions on Health Care, and introduced into Congress legislation on topics covering a wide variety of healthcare reform issues.

The results of these efforts show that: 1) the federal legislative docket is now teeming with health access bills and the elements of many bills are consistent with the elements of Health Access America; 2) the Bush administration has taken a long overdue step in advocating tort reform if not yet reform of the entire healthcare system; 3) the first phase of our proposal for Medicaid reform has been enacted into law with extension of this program to pregnant women and children under 18 years of age.

Dr. Tupper challenged all of us to continue to be leaders in providing the best of health care for all Americans.

SOUTH CAROLINA MEDICAL ASSOCIATION ACTIVITIES

Our delegation continued to be one of the hardest working delegations at the Annual Meeting. Except for a "breather," on Saturday morning when we started at 8:00 a.m., our days began at 7:00 a.m. and continued far into the night. It was a difficult task to sandwich in the demands of Randy Smoak's campaign with all the essential work, but I think we managed quite well.

The delegation included Delegates Randy Smoak with Saundra, Don Kilgore, and Walt Roberts with Nancy. Alternate Delegates were Charlie Duncan with Pat, Dan Brake with Sue, and Chris Hawk with Fran. Also present were John Hawk with Nancy; John Simmons, Immediate Past President, with Patsy; Bart Barone, President-Elect with Topsy; Ed Catalano, Chairman of the Board, and Susie; and Steve Imbeau, SCMA Secretary, with Shirley. Special visitors who helped with Randy's campaign included Dr. Bob Taylor, Spartanburg, Past President of the American Academy of Family Physicians; Dr. Jim Edwards, President, and Dr. Mark Newberry, Vice President of MUSC. We also had enthusiastic support from the medical auxiliary led by Billie Brady, Past President of the AMA Auxiliary, and an active contingent which included Virginia Johnson, Hope Grayson, Betsy Terry, Betty Hester, Jeanne Sabback and Donna Abercrombie. Bill Mahon and Barbara Whittaker from the SCMA staff attended and made all the numerous and complicated arrangements. Many of these people representing South Carolina attended at their own personal expense in an effort to help Randy Smoak's campaign, and we owe them a deep dept of gratitude.

Apart from the business of the meeting, the main focus was on the campaign for the election of Randy Smoak to the AMA Board of Trustees. Randy has an outstanding record on the AMPAC Board, including two years as Chairman of the Board and three years as liaison representative on the AMA Council on Legislation. He has visited many county and state medical societies and is widely known and well respected. His semi-annual reports to the House of Delegates have been well received. The entire South Carolina Delegation worked very hard on Randy's behalf; I am sure that no delegate, who had not been living in a monastery for the past three months failed to be approached by at least one of our group. The campaign culminated in a reception on Tuesday night which featured She-crab soup, South Carolina barbecue, and pecan pie. Well over 900 people attended this reception. Despite the large attendance, with Bill Mahon's careful stewardship, the cost of this party was no more than smaller parties that we had given in previous years. The big disappointment was that Randy lost by only two votes. All the people we talked to from other states felt that we had run an outstanding campaign and were greatly surprised that Randy was not elected. They were almost unanimous in urging that he run again in 1992, and this is our current plan.

BUSINESS FACING THE HOUSE OF DELEGATES

Perhaps the most widely discussed issue was implementation of a new Medicare physician payment system in January 1992 by HCFA. The government's proposed implementation was set forth in the June 5, 1991 Federal Register. It is totally unacceptable and does not reflect the intent of Congress. All physicians are outraged by this proposal. By not providing promised payment increases for certain services and by more severely reducing payment increases in other areas, the current proposal destroys the carefully constructed reform package that was enacted in 1989. Without the strong unified efforts of the medical profession to alter the proposed rules, the plan will eliminate the benefits of physician payment reform that Congress intended. The new system will utilize a resource-based relative value scale

(RBRVS) which reflects differences in physician resource costs (e.g., overhead costs, professional liability insurance) across services. Actual payments are determined by applying to the RBRVS an annually updated monetary conversion factor and geographic practice cost indices.

The new system will change the Medicare payment levels for most physician services. Generally, visits and consultations are to be paid at a higher level than if the current system had continued as well as services provided in rural areas. Procedures are to be paid at a lower level. In 1988 the American Medical Association adopted the position that an RBRVS payment schedule adjusted for geographical practice cost differences was the policy option for Medicare payment that was most appropriate for physicians and their patients. The AMA strongly advocated this approach as far preferable to the other options that were under consideration at that time, such as DRGs for physicians and mandatory capitation. Congress incorporated key elements of the AMA policy in its 1989 payment reform legislation which the AMA supported, including RBRVS and geographical practice cost adjustments. Unfortunately this legislation diverged from other critical elements of AMA policy, most notably by continuing and making more stringent Medicare balanced billing limits.

Our particular concern in the proposed rule is the administration's inappropriate interpretation of budget neutrality, which severely reduces the system's beginning conversion factor. This results in drastically decreased payment levels for physician services through 1996 and beyond. By nullifying potential payment gains for many rural and primary care services and deepening cuts in other areas, the proposed rules do not reflect Congress' intent. During the 60-day public comment period following the proposal's release the AMA along with medical specialty, and state and local medical societies will review HCFA proposed rules and assess their impact on physicians and Medicare patients. The AMA will lead in commenting on and seeking necessary changes in the regulations prior to implementation in 1992. Aggressive efforts will be mounted to reverse the deep payment cuts that will occur if the proposed conversion factor is allowed to stand.

It is requested that all physicians immediately contact their senators and representatives to express strong objections to the proposed conversion factor cuts. You should request your members of Congress to support legislative initiatives to: 1) Prohibit the HCFA from applying a behavioral offset; 2) Prohibit reducing the conversion factor to correct for the transition asymmetry; 3) Eliminate the tripling effect of transition adjustments. (It increases fees to patients by decreasing payments to doctors). It is important that your Congressmen express support for these three objectives by contacting their colleagues on the House Energy and Commerce, House Ways and Means, House Budget, Senate Finance, and Senate Budget Committees. You should also ask your members to contact HSS

Secretary Louis Sullivan and HCFA Administrator, Gail Wilensky. The deadline for comment is August 5, 1991.

HIV testing continues to be a controversial topic. The House of Delegates voted that the AMA continue to oppose mandatory HIV testing but encourage voluntary testing of healthcare workers and students - particularly those who are at highest risk for the disease. The House also called for oral consent for testing of any person when the situation dictates. Laws on what types of consent are required vary from state to state. The written consent forms that are now required in some states are so cumbersome that they discourage physicians from ordering and patients from agreeing to the test. A resolution was also passed recommending AIDS testing be mandatory for all inmates, and that prisoners be tested again within 60 days before their release because of the extremely high incidence in our prison system.

Delegates opposed to mandatory testing argued that it would create a false sense of security because it can take up to six months for signs of the virus to show up and the tremendous cost of general mandatory testing.

Another resolution passed unanimously by the House of Delegates warned of the inherent dangers of the US Supreme Court ruling barring federally funded clinics from discussing abortion with patients, because it infringes on the doctor-patient relationship. AMA Board member Dr. Nancy Dickey stated "do patients in this country really want judges and politicians on the examining table with them? We really don't perceive this as an abortion issue, we see it as a doctor-patient issue. I want the right to tell my patients what the options are." Dr. Dickey said that regardless of their views on abortion, AMA members were outraged by this ruling. Many doctors are worried that if the government can tell them what they can and cannot say about abortion it may eventually tell them what to say and do in other matters.

The South Carolina Medical Association resolution that the AMA adopt as its foremost legislative priority for 1991 the adequate funding of the Medicare program and that the AMA initiate legislation to prevent any further reduction of the physician charge limits was adopted unanimously by the House and incorporated in report WW of the Board of Trustees.

Other matters will be summarized in AM News. I appreciate the opportunity of serving as a Delegate from South Carolina and hope that we have represented your viewpoints well.

Editorials

A TRIBUTE TO MIKE JARRETT

The most poignant moment at this year's annual meeting was John Simmons' presentation of the President's Award to Michael D. Jarrett, Commissioner of the South Carolina Department of Health and Environmental Control (DHEC). Young, enthusiastic, and the first non-physician to hold this important position, Mike Jarrett was found last year to have metastatic cancer. His courage has been a source of inspiration to all who know him, and his comments at the banquet were deeply moving.

Mike's accomplishments are well known. As further tribute, it seems appropriate to reproduce two letters recently received at the SCMA office. The first came from Dr. Oscar F. Lovelace, Jr., a family practitioner in Prosperity:

> As a recipient of the rural health scholarship program which was administered through the Office of Primary Care, I am thankful for DHEC. When I established my family medicine practice in Prosperity, South Carolina, Mike Jarrett was present at the open house and has been a stable source of support since I started my practice in August of 1988. Fourteen months after I came here the only OB/GYN in our county died suddenly of a massive myocardial infarction and I was left as the only obstetrical provider for the county for approximately 10 months until I found a partner. Without the capable leadership of people like Mike Jarrett, it may have been difficult to see the light at the end of the tunnel. In my opinion, he is an unsung hero of health care for the less privileged people of our state.

The second letter was from Mike himself to our immediate past president, Dr. John W. Simmons:

> Thank you for recognizing me in such a special way. The President's Award was enough in itself! The scholarship, having my family there, the *surprise;* your presentation and the banquet were extra special. It was the first time I was completely caught off guard and by surprise in receiving an award. I fear my response because of my emotions, was inadequate.
>
> I have been so honored and pleased with the cooperation I have received from the physicians and staff of the Association. Working with all of you is a pleasure. You and your leadership during this past year made the relationships between the Association and DHEC even stronger.
>
> The success we have made improving access to care for prenatal patients is outstanding. The improvement could not have been accomplished without the efforts of members and staff of the Medical Association, Andy Laurent and staff of the Health & Human Services Finance Commission, Jim Solomon and staff of the Department of Social Services, staff of the Governor's Office, staff of DHEC, and others. Because of the efforts of so many I feel humbled receiving recognition but I appreciate tremendously and thank you.

On May 30, 1991, I had the privilege to hear Mike Jarrett give the commencement address at a small high school graduation ceremony. Making frequent eye contact with the graduates, he emphasized the cause-and-effect relationship between our actions and outcomes. I jotted down several of his aphorisms:

* "Happiness is doing, striving, and serving."

* "No man can help another without helping himself."

* "When you serve others, you can't help but serve yourself."

But the most inspirational of his aphorisms was the following, attributed to his grandmother: "If all of our problems were hung on a line, you'd take yours and I'd take mine." I suspect that only a few in that meeting hall knew of his own. Now that's courage!

—CSB

PRACTICING PHYSICIANS AND MEDICAL WRITING

The Thomas A. and Shirley W. Roe Award for the best article published in *The Journal* makes ours a rather unique periodical among its kind. *The Journal* was founded in 1905 especially to provide a forum for observations by practicing physicians, and we continue to emphasize this desideratum. It was therefore gratifying that no fewer than 30 papers written by practicing physicians were considered for this year's award. In the end, the editorial board chose two recipients: Dr. Jeff Z. Brooker of Columbia (for a scientific article) and Dr. C. Don Bessinger of Greenville (for a special article devoted to medical ethics).

It came to our attention that the 37 articles in *The Journa*l written over the years by Dr. R. Randolph Bradham of Charleston probably constitutes an all-time record. The 1983 Roe Award recipient, Dr. Bradham has also published in all of the major surgical journals such as the *Archives of Surgery, Annals of Surgery*, and *Surgery, Gynecology, and Obstetrics.* At this year's meeting, I sought out Randy Bradham to learn his philosophy of authorship by practicing physicians. I came away with three points.

First, it's meaningful. Dr. Bradham opined that: "if a physician publishes just one article, when he looks back over his or her career it will be one of the most meaningful things he or she has ever done." It will be "a little bit of medical history."

Second, it's possible. "I don't feel that anyone is too busy to write," he said. Noting a large, flat table in Dr. Bradham's office, I asked him about its purpose. "Oh, that's my projects table," he said. By keeping the materials related to his work-in-progress in one place, he makes optimum use of whatever spare moments fall his way. (His one hundredth article was on the drawing board that day.)

Third, it "makes you a better doctor." Writing forces one to become more objective and analytical about his or her observations. Submitting one's work to the scrutiny not only of editors, reviewers, and contemporary readers but also to all who might follow is good exercise. It makes one think.

All of us see in our practices cases that "we ought to write up," but seldom get around to it. It requires discipline—but it is possible. *The Journal of the South Carolina Medical Association* will continue to encourage articles by practicing physicians, for we feel that this is in fact one of our unique missions.

—CSB

A TREACHEROUS CALM?

It was difficult to extract a good news story from the 143rd Annual Meeting of the South Carolina Medical Association, held April 24-28 in Charleston. Reporters seemed to have their frustrations, and so did I. Sunday morning's House of Delegates meeting was over by 10:30—probably a record. There was little controversy.

With so little controversy, why bother to attend except for fellowship (which is excellent) and for continuing medical education (which improves each year)? For the moment, my best response would be by analogy to what surgeons call the "treacherous calm" after rupture of, say, the appendix but before the symptoms of generalized peritonitis.

Speaker after speaker stressed one theme: at some time during the next decade—perhaps sooner, perhaps later—there will be dramatic changes in the way health care is financed and in the way medicine is practiced in the United States.

Giving the Leonard Douglas memorial lecture, Mr. Gerald L. McManis spoke of "a rising crescendo of voices demanding change in the industry." The current healthcare payment system will not be viable in the near future. He voiced his opinion that universal access to healthcare will be guaranteed in some fashion, even though a "right to die" philosophy will also prevail. He also predicted that by the year 2000, 85 to 95 percent of health care will be managed care. Someone other than physicians will determine who does what. Yet the risks of healthcare costs will be shifted from payers to providers. Clearly, our healthcare systems must strive for quality, accessibility, and value.

Giving the SOCPAC luncheon address, Congressman Butler Derrick expressed his opinion that government will *do something*. Congress will not remain silent as the fraction of our gross national product spent on health care increases each year. His unequivocal advice: "If your house is on fire, you need the fire department!"

Dr. John J. Ring, president-elect of the American Medical Association, reminded us what the AMA is doing in our behalf: "promoting the art and science of medicine and promoting public health." He expressed his opinion that there will be a great national debate over reform in healthcare delivery. In this debate, we must be united: "Now is the time for physicians to come together."

And our own leaders were by no means silent. Our new president-elect, Dr. Bartolo M. Barone, informed us that only 63 percent of South Carolina physicians belong to the SCMA. Dr. John W. Simmons, our outgoing president, noted that 100 percent of the physicians in Hampton and Allendale counties belong to both the SCMA and the AMA and that the rest of us should follow their examples. Dr. J. Chris Hawk, III, our new president, emphasized that to be leaders we must (1) be informed, and read about medical issues; (2) be involved, and participate in organized medicine; and (3) attempt to influence policy.

In summary, the 1991 annual meeting may well be remembered as a treacherous calm. We must continue to encourage membership, participation, and action. We cannot afford to do otherwise.

—CSB

Letter to the Editor

THEY ALSO SERVED

To the Editor:

I certainly thank you for the mention of my name in the May 1991 Journal of the South Carolina Medical Association. While I appreciate the recognition of my service, I would feel remiss if I did not cite the efforts of two fellow Orthopaedic Surgeons who made it possible for me to be away from my patients.

I am a Retired Regular Army Officer and as such was subject to recall to Active Duty. I was recalled and served on the Teaching Staff at Walter Reed Army Medical Center where we took care of over a hundred and fifty casualties from Operation Desert Storm and Desert Shield. I was called up on extremely short notice. I had patients with casts on and postoperative patients. I called Dr. Rick McCain and then Dr. John Eady. They, without hesitation, agreed to give up some of their free time and to come to my office one half day a week. They did this without any compensation at all. One hears so many adverse things about Physicians and their motivations from the lay public and too often the good works of our colleagues go unrecognized.

By their unselfish efforts, my patients received care that they would have had to go elsewhere to get. I was able to retain key employees and to keep them busy and to pay my office overhead. As a Solo Practitioner these things are certainly important to me but patient welfare and continuity of care are the main things that I was concerned with in my absence along with the welfare of my family. As it was, the situation was not nearly as bad as it could have been for any of us.

I feel some special public recognition for John Eady and Rick McCain is indicated and I would like to cite perhaps a printed Letter to the Editor or a commentary in your monthly column what fine work they have done and how deeply I, my family and my employees appreciate it.

Joseph P. Jackson, Jr., M.D.
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President's Page

WHAT I LEARNED AT THE AMA MEETING

This year's annual AMA meeting in Chicago was different. The format of the meeting was the same. The issues were familiar. The difference was our concentrated focus on Randy Smoak's campaign for AMA Trustee.

At one of our 7:00 A.M. meetings, I mentioned that I had never worked so hard at a meeting and learned so little. One colleague responded that I may be surprised at how much I learned. How much did I learn? How could I use it to be a better physician?

Randy's campaign involved considerable work prior to the AMA meeting. He visited many other state meetings. He mailed flyers outlining his background and experience and sent individual cassette tapes to each AMA delegate summarizing his position on major issues. He achieved his goal of arriving in Chicago in a position to win. The election depended on the effectiveness of our final campaign. Randy's presentations to the various regional caucuses were well received. He made an effort to meet and speak to all the delegates. Our job in the South Carolina delegation was contacting each of the 440 Delegates from state and specialty societies to solicit their vote for Randy.

Seven good candidates, including three strong incumbents, were vying for the four Trustee slots. When the votes were counted, Randy had lost by two votes, 262 to 260.

Randy Smoak ran an excellent campaign. It had good organization, innovative ideas, the best and most popular party, but most important—a superb candidate. Despite our best efforts, he had lost, and we were devastated. What could I learn?

Randy and Saundra Smoak were magnificent in defeat. Although obviously disappointed, he thanked everyone for the privilege of running, for the opportunity to get to know them, and for their support. He is a winner by the way he handled that defeat. I hope I have learned from it.

This small political race was similar to many other more important campaigns in medicine. We put our best foot forward in presenting our ideas to Congress, HCFA, the state legislature, the governor, or the Medicare carriers. We educate them on our position, but many times we are disappointed in the result. That's politics, and medicine must deal in the political arena.

For me personally, the campaign was a great opportunity. It forced me to meet many of the AMA Delegates and Alternate Delegates. One of them mentioned to me how much he loved the AMA. "After the elections are over, and the arguments on the floor of the House of Delegates have finished, these are my friends, my best friends."

Do you feel the same way about medicine and the practice of medicine? Is medicine like a good friend? Even after numerous disappointments and hassles, isn't medicine the profession you want? It's easy to be discouraged, and it's important not to be. I am not the only one who has read the latest Medicare Advisory or PRO notice and wondered why I went to medical school. That's when I have to think about "The ABCs of Being a Good Physician" in order to get in a positive frame of mind. I use patient encounters to forget about the unpleasantness and concentrate on the pleasure of practicing medicine. I am not suggesting that we should be completely satisfied, but we certainly shouldn't withdraw and abdicate our responsibility.

Medicine is what we make it. We'll win some, we'll lose some. It's important to be good losers and to learn from our losses. It's a team effort. Everyone's role is essential. The journey is as important as the destination. We need to enjoy our family, friends, and career along the way. That's what I learned at the AMA meeting. Now if I can apply it, I can be a better physician.

J Chris Hawk III MD

J. CHRIS HAWK, III, M.D.
President

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VENOUS THROMBOEMBOLISM: ANTICOAGULATION, LYSIS, OR FILTER?*

JACOB G. ROBISON, M.D.**
BRUCE M. ELLIOTT, M.D.

INTRODUCTION

The occurrence of deep venous thrombosis and its sequelae remains such a common problem that nearly every physician will encounter patients afflicted with this difficult management problem. Not only does venous thrombosis predispose to pulmonary emboli but the late manifestations of extensive deep venous thrombosis can present difficulties in the management of the postphlebitic syndrome. The primary physician should be familiar with the treatment of deep venous thrombosis as well as the options for treatment of pulmonary emboli. This review will focus on rationale for the treatment of deep venous thrombosis, the role of thrombolytic therapy, and the indications and methods for vena cava interruption.

TREATMENT OF DEEP VENOUS THROMBOSIS

Unless there are specific contraindications, anticoagulation with continuous administration of intravenous heparin remains the standard treatment for deep venous thrombosis.[1, 2] It is important that the patient achieve adequate anticoagulation so that the partial thromboplastin time (PTT) is at least one and one-half times normal. However, there is little evidence to substantiate that the close regulation of the PTT within a defined range reduces the bleeding complications associated with heparin therapy, especially during the first 48 hours of therapy.[3] Monitoring the platelet count for patients who are on heparin therapy more than 48 hours is as important as monitoring the PTT, and heparin therapy should be discontinued for patients who develop progressive thrombocytopenia. The treatment of calf vein thrombi is controversial. Since 20 percent of symptomatic thrombi will propagate into the femoral popliteal system and half of those that propagate will embolize,[1, 4] we feel these should receive treatment with anticoagulation.[5] If anticoagulation is not chosen, it is imperative to follow calf vein thrombi with non-invasive testing to assure there is no proximal progression of the thrombus. Anticoagulation with Coumadin can generally be initiated simultaneously with heparinization to shorten hospitalization. The therapeutic range is maintained to keep the prothrombin time (using rabbit thromboplastin) between 1.2 and 1.5 times the control, generally between 15 and 18 seconds, two to three days before cessation of heparin. Bedrest with leg elevation is recommended during the interval until swelling and symptoms have resolved, usually about three to five days. Alternatively, adjusted dose subcutaneous heparin can also be used for long term anticoagulation as an outpatient.[6] Heavy weight (30 to 40mm gradient) below-the-knee support hose therapy is initiated once ambulating in order to minimize development of postphlebitic changes in the involved extremity, especially if there is evidence of venous reflux or a diminished venous recovery time by non-invasive laboratory measurement. Anticoagulation is continued for three to six months. Patients with recurrent documented DVT may require longer periods of anticoagulation.

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Surgical thrombectomy has very limited utility in the management of venous thrombosis due to the high incidence of rethrombosis and residual valvular disfunction. However, selected patients with iliofemoral or axillary-subclavian vein thrombosis may benefit.[7]

Alternative medical therapy to standard anticoagulation involves the systemic administration of thrombolytic agents such as streptokinase, urokinase, or tissue plasminogen activator.[8, 9] In order to minimize the other systemic effects of streptokinase, we prefer to pretreat the patients with 100 mg of hydrocortisone. Streptokinase (250,000 units) is then administered over approximately 30 minutes, and the patient is maintained on 100,000 units per hour intravenously. While we have no experience with tissue plasminogen activator in treating DVT, urokinase appears to have some advantage in the decreased incidence of systemic side effects and decreased hemorrhagic complications during the administration of systemic doses using 4,000 units of urokinase per kg over ten minutes followed by a constant infusion of 4,000 units per kg per hour. The disadvantage of urokinase is that it is considerably more expensive than streptokinase. Both regimens will produce systemic effect in over 90 percent of patients within an hour after initiation therapy.

Bleeding is the major complication associated with systemic thrombolytic therapy. Once patients develop bleeding, cessation of therapy is imperative and correction of clotting factors indicated with fresh frozen plasma or cryoprecipitate. To reduce the chance of bleeding during therapy, coagulation status should be monitored by documenting the lytic state and following laboratory parameters such as thrombin time, fibrin-split products, fibrinogen, and hematocrit twice daily. Although none of these parameters would seem to definitely predict patients who develop hemorrhagic complications, it is our practice to decrease the rate of infusion in patients whose fibrinogen becomes less than 100 mg percent. When maintenance of a higher rate of thrombolysis is a priority, fresh frozen plasma to keep the fibrinogen above this level can be administered. Percutaneous punctures are minimized. Systemic lytic therapy is maintained for approximately three to five days and then anticoagulation with Coumadin is initiated. Successful experience with the direct local infusion of lower doses of lytic agent directly into upper extremity great vein thromboses, especially when associated with effort thrombosis of the subclavian vein (Paget-Schroeder syndrome), has been reported. However, great vein thrombosis associated with iatrogenic catheter-induced thrombosis has not been treated as successfully in our experience, probably because of the more chronic, progressive nature of such occlusions. Restoration of central venous catheter patency by infusion of small doses of urokinase (5,000 units) via the catheter has proved extremely useful, however, in maintaining catheter function.

Absolute contraindications to systemic thrombolytic therapy include the presence of active internal bleeding or evidence of intracranial pathology such as a recent stroke within a two-month period. Other relative major contraindications to systemic thrombolytic therapy include recent surgery or organ biopsy within ten days, GI bleeding (less than six months), or active peptic ulcer disease. In addition, visceral malignancy, uncontrolled hypertension, or obstetrical delivery within two months constitute relatively major contraindications to lytic therapy. Relative minor contraindications include patients having undergone cardiopulmonary resuscitation, minor surgery, or trauma. In patients with atrial fibrillation or evidence of mural thrombus, the possibility of partial clot lysis with subsequent embolization must be weighed against the benefits of systemic thrombolytic therapy. Furthermore, the risk benefit ratio should be carefully considered in patients with known coagulation defects or thrombocytopenia.

Clear contraindications to streptokinase itself include a known allergy to streptokinase, a recent streptococcal infection, or previous treatment within the previous six months. In addition, resistance to therapy with the administration of 1,000,000 units without any documented lytic effect should preclude further treatment with streptokinase.

It is important to recognize most patients with deep venous thrombosis involving veins proximal to the calf will eventually develop a postphlebitic syndrome several years later which is frequently associated with a significant morbidity in the form of swelling, hyperpigmentation, and ulceration.[10] While the dissolution of intravascular and venous thrombus has appeal both in terms of therapeutic benefit and the avoidance of these long-term sequelae, the benefits of systemic lytic therapy for deep venous thrombosis over that of standard anticoagulation is not clear.[9, 11] Hemorrhagic complications occur with herapin therapy in three to five percent of the cases; the hemorrhagic complications associated with systemic lytic therapy are approximately three times greater, ranging between 10 and 15 percent although urokinase may have a lower risk than streptokinase.[11, 12] However, recanalization of the deep venous system occurs in 50 percent of those undergoing systemic lytic therapy and only 10 to 25 percent of those patients treated with anticoagulation alone. Furthermore, complete clot lysis occurs in seven times as many patients undergoing lytic therapy, and documented normal valve function occurs in four times as many patients undergoing lytic therapy compared with those of standard anticoagulation. Despite this improved patency and valve function, it is not clear that the postphlebitic syndrome can be prevented by the administration of lytic therapy as evidenced by the experience of Kakkar et al.[13] Both modalities do appear to be efficacious in the prevention of major and fatal pulmonary emboli, with an incidence of between five and ten percent during treatment.

Is there an indication for a thrombolytic therapy as opposed to standard heparin anticoagulation? Thrombolytic therapy should be considered in young patients with no major contraindications to lytic therapy and no previous history of deep venous thrombosis. Definite diagnostic proof of deep venous thrombosis should be available usually in the form of venography or duplex scanning, and the onset of symptoms should not exceed 72 hours. In addition, there is some suggestion that patients with proximal extension of the clot into the iliofemoral system may benefit from thrombolytic therapy. Unless contraindicated, an attempt at systemic thrombolytic therapy may be the initial treatment of choice for patients with phlegmasia cerulea dolens and impending venous gangrene.[14]

PULMONARY EMBOLISM: ANTICOAGULATION, LYSIS, OR FILTER?

The importance of anticoagulation in the treatment of pulmonary embolism has been well documented in 35 patients with pulmonary emboli treated in a prospective study.[15] Only one of 16 patients treated with anticoagulation subsequently died and this death was unrelated to a pulmonary embolus, whereas five of 19 patients who were not treated with heparin therapy suffered death from recurrent pulmonary emboli. A retrospective study of 516 cases of pulmonary embolism found that heparin treatment was associated with a survival of 92 percent and only a 16 percent incidence of pulmonary embolism recurrence. This was in contrast to a survival of only 42 percent with a 55 percent incidence of recurrence among patients who were not treated with heparin therapy.[16]

Since heparin does not dissolve formed thrombi and the clearance of heparin may be accelerated by large thromboemboli,[17] necessitating rather large doses (60,000 to 75,000 units per day), thrombolytic therapy would seem to have theoretical advantages over heparin therapy alone. Although studies have indicated a slight early improvement in both pulmonary reperfusion and pulmonary vascular resistance compared with patients treated with heparin, there was no overall documented improvement in mortality with lytic therapy. Furthermore, there is an increased risk of hemorrhage and increased cost among these patients treated with fibrolytic therapy, and in most cases, the use of thrombolytic therapy for pulmonary emboli is not justified. Certain indications for initiation of fibrolytic therapy may include patients with severe right heart failure, associated hypotension, or evidence of massive saddle embolism who would otherwise be candidates for pulmonary embolectomy. Direct infusion of the lytic agent via a Swan-Ganz catheter is an attractive alternative to pulmonary embolectomy but not of proven benefit over systemic lysis or surgery.[18] Greenfield has described the use of a percutaneously placed catheter-suction device to extract a large pulmonary emboli but the overall clinical efficacy with this method remains to be confirmed.[19]

PULMONARY EMBOLISM: INDICATIONS FOR INFERIOR VENA CAVA INTERRUPTION

The interruption of the inferior vena cava to reduce pulmonary emboli as a consequence of deep venous thrombosis is generally performed for two primary indications: first, recurrent pulmonary emboli—preferably documented by pulmonary angiography—while on adequate anticoagulation, and secondly, patients who have a contraindication to anticoagulation (such as patients with recent neurosurgical procedures, intracranial pathology, or patients with active or anticipated bleeding diathesis). Other considerations include patients with evidence of a floating thrombus in the inferior vena cava, patients with massive or previous pulmonary emboli who are at high risk for losing additional lung function, patients with spinal cord injury, and patients surviving successful pulmonary embolectomy.

Various methods and devices for interruption of the inferior vena cava have been proposed.[20] Ligation of the infrarenal inferior vena cava reduces the incidence of recurrent emboli to less than two percent. However, ligation is also associated with an operative mortality of approximately five to 10 percent. The application of an external vena cava clip (such as the DeWeese or Miles clip) also has an acceptably low recurrent emboli rate of less than five percent. Both ligation and the external clips result in a high incidence of lower leg swelling and subsequent postphlebitic changes. Intraluminal devices such as the Mobin-Uddin umbrella, the Hunter balloon, or the Greenfield filter have been utilized to reduce the morbidity and mortality associated with operative interruption of the vena cava, since these can be placed either through a small cutdown or percutaneously and also have a low incidence of recurrent pulmonary emboli.[20] More recently, variations of the Greenfield filter such as the Vena Tech filter or the "birdnest" filter have been reported to be successful as well. All can now be placed via a percutaneous 12 French venous cannula. Patency of the inferior vena cava appears to be best maintained using the Greenfield filter with a documented patency of over 90 percent and extremely low long-term morbidity.[21] This improved vena cava patency should reduce the severity of the postphlebitic sequelae, although this has not been clearly shown to date. High patency also allows this filter to be placed in the suprarenal position if necessary, and Greenfield filters have been placed in the superior vena cava for patients with pulmonary emboli resulting from upper extremity great vein thromboemboli.

SUMMARY

Experience and review of the literature suggest that when deep venous thrombosis does occur, standard anticoagulation with heparin followed by Coumadin is the mainstay of treatment for both deep venous thrombosis and pulmonary emboli. However, thrombolytic therapy with urokinase or streptokinase may benefit selected patients. Percutaneous caval interruption is the optimal technique to prevent pulmonary embolization, but should be reserved for patients who have contraindications to anticoagulation therapy or recurrent emboli despite adequate anticoagulation. Selected high risk patients may also be candidates for caval interruption. ☐

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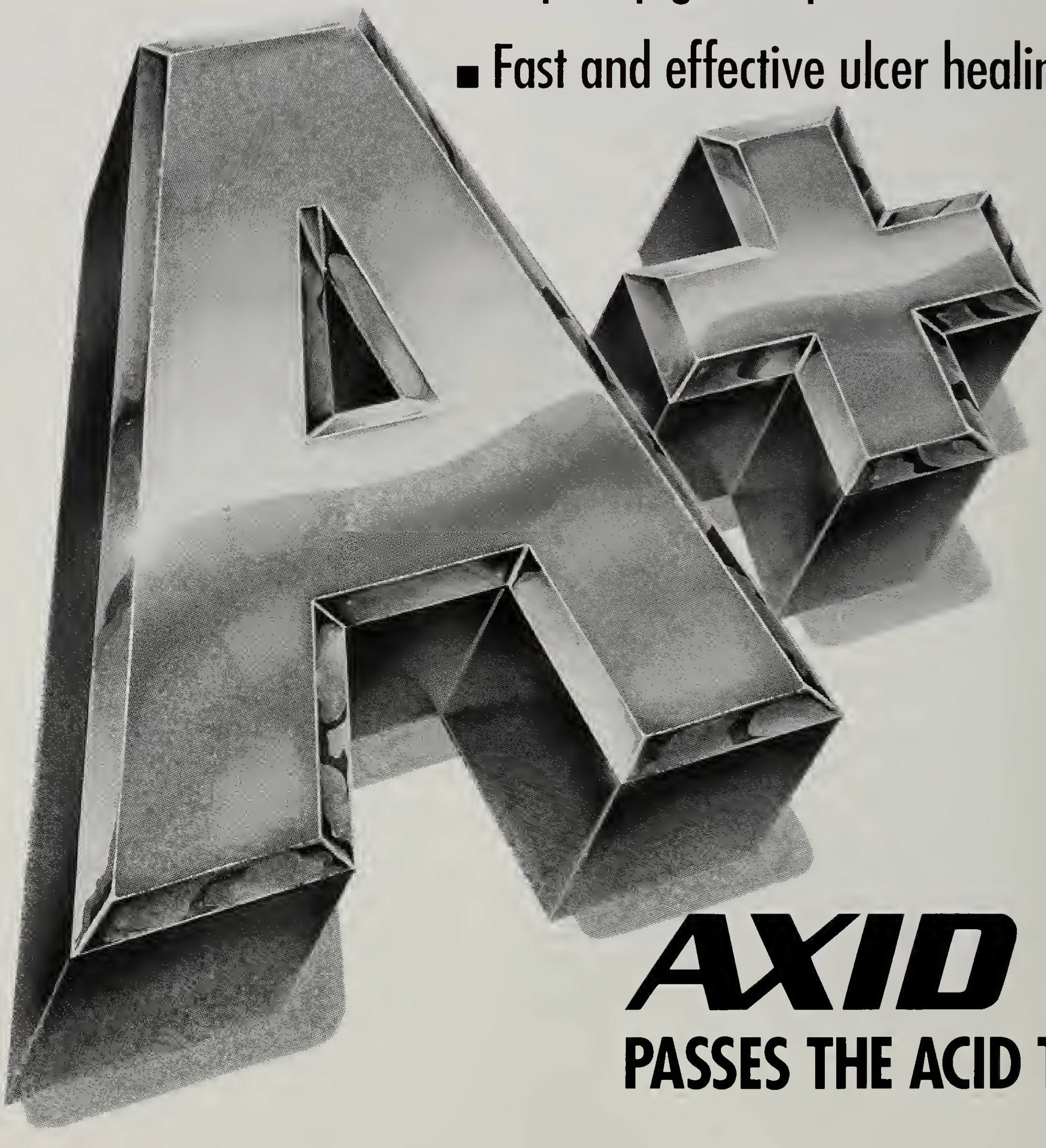

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Carcinogenesis, Mutagenesis, Impairment of Fertility—A 2-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a 2-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a 2-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in 1 fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in 1 fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use—Safety and effectiveness in children have not been established.

Use in Elderly Patients—Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events were due to the drug.

Hepatic—Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to 3 times the upper limit of normal, however, did not significantly differ from that in placebo patients. All abnormalities were reversible after discontinuation of Axid. Since market introduction, hepatitis and jaundice have been reported. Rare cases of cholestatic or mixed hepatocellular and cholestatic injury with jaundice have been reported with reversal of the abnormalities after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in 2 individuals administered Axid and in 3 untreated subjects.

CNS—Rare cases of reversible mental confusion have been reported.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic—Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity—As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis does not substantially increase clearance of nizatidine due to its large volume of distribution.

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LYME DISEASE IN SOUTH CAROLINA*

CATHERINE RUMPEL, M.D., M.P.H.
JEFFREY L. JONES, M.D., M.P.H.**

The first reported case of Lyme disease in South Carolina occurred in 1984, in a nine-year-old black male who developed a rash and arthritis with positive serologic studies for Lyme disease.[1] Lyme disease was originally recognized in 1975 by Steere *et al.*, when a clustering of arthritis cases occurred in Lyme, Conn.,[2] although erythema chronicum migrans (ECM) had been known in Europe since the early 1900s.[3] The spirochete responsible for Lyme disease, *Borrelia burgdorferi,* was identified by Burgdorfer in 1982.[4] Ninety-five percent of Lyme disease cases occur in Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Wisconsin and Minnesota.[8] It is now the most commonly reported vector-borne disease in the United States.[9] Lyme disease is not common in South Carolina, but cases do occur. This paper will summarize what is known about the epidemiology of Lyme disease in South Carolina and the epidemiology of potential tick vectors in the state.

BACKGROUND

South Carolina is a predominantly rural state with a population of 3,518,760, of which 32 percent is black. The geography of the state varies from the coastal plains in the east to the mountains in the northwest, with elevations from 0 to 1500 feet. The principal potential animal reservoirs of *B. burgdorferi* appear to be the white tailed deer and the white footed mouse. Both of these species are present in South Carolina, with the mouse present predominantly in the northern part of the state and the deer present throughout the state.[10] Ticks common in South Carolina include *D. variabilis* and *A. americanum*, which are summer ticks and *I. scapularis*, which is often a winter tick in South Carolina.[11]

The vector of Lyme disease is *Ixodes dammini* in the northeast and midwest and *I. pacificus* in the west. *I. scapularis* is thought to be the probable vector of Lyme disease in the southeast.[3] There is some evidence that I. *scapularis* and *I. dammini* may be the same species.[3] *Amblyomma americanum* has been associated with two cases of Lyme disease in New Jersey and *B. burgdorferi* has been isolated from this species (9.1 percent contained spirochetes by darkfield exam) which were serologically identical to *B. burgdorferi* by direct immunofluorescence.[5]

Laboratory investigations of the ability of *Dermacentor variabilis*, *A. americanum* and *I. scapularis* to acquire, maintain and transmit *B. burgdorferi* have been done.[6] *D. variabilis* and *A. americanum* were infected as larvae, but the infection rate was low (one percent and nine percent infected respectively) and the infection was short lived. *I. scapularis* infected as larvae maintained infection transstadially and transmitted infection to hamsters. *I. dammini* has a complex life cycle, which may last two or more years.[3] Larvae engorge July-September, while nymphs attach May-July the following year. Adult females feed in fall and winter.[3] Spirochetes are found in the tick midgut and infect saliva. Transmission may occur when saliva is injected into the skin or when feces are deposited on the skin near the bite site.[7] Duration of tick attachment correlates with efficiency of transmission of infection. In one study of nymphal *I. dammini*, at least 24 hours of attachment were required, for transmission to an animal host with 72 hours required for 100 percent transmission.[7]

EPIDEMIOLOGY OF LYME DISEASE

The description of Lyme disease epidemiology is heavily dependent on the case definition used. In this state there have been three case definitions used since 1985. The first is the original CDC case definition in use from 1985 to July, 1989. A definite case was defined as ECM with involvement of at least two organ systems or ECM and a positive serologic test (immunofluorescent antibody test or enzyme-linked immunosorbent assay). A possible case was ECM alone or involvement of at least one organ system and a positive serologic test.

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The second case definition was adopted in August, 1989 in an effort to make the case definition more specific. A definite case was defined as ECM and at least one of the following laboratory criteria:

1. Fourfold rise in titer on paired sera
2. Positive culture for *B. burgdorferi*
3. Single IFA >= 1:256
4. ELISA >= laboratory standard

A possible case was defined as no ECM, symptoms compatible with Lyme disease and one or more of the laboratory criteria or ECM without laboratory confirmation.

In June, 1990 the CDC, in collaboration with the Council of State and Territorial Epidemiologists, released a new case definition which is currently used by most states including South Carolina. A definite case is now defined as ECM or at least one late manifestation of Lyme disease and laboratory confirmation.

In South Carolina, mandatory reporting of Lyme disease has only been required since 1989. Prior to this, each clinician reporting a case used his own criteria, and often the details needed to define a case by CDC criteria were not available. Each case report was assessed using the case definition in place at the time of the report. Any case which had incomplete information on diagnostic criteria was included as a possible case. There have been 71 case reports submitted to DHEC from 1985 through August, 1990, of which 40 were officially reported by physicians (the remainder being reported by laboratories).

Table 1 shows the importance of the case definition used. To develop this table, each of the 71 reports was evaluated by each of the three case definitions. In this analysis, the number of definite cases increases as the case definition becomes less stringent in the more recent time periods.

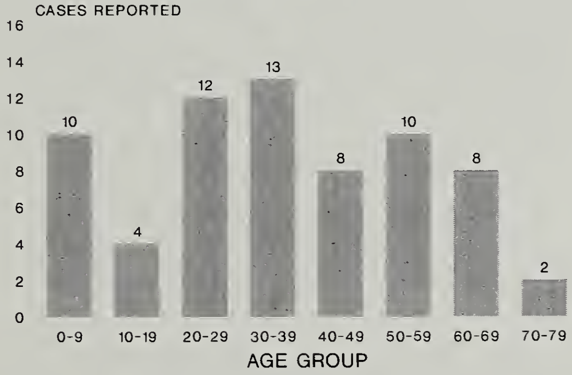
TABLE 1

LYME DISEASE IN SOUTH CAROLINA: CASE STATUS BY CASE DEFINITION

Case Status	*Definition 1 1985-07/89*	*Definition 2 08/89-05/90*	*Definition 3 06/90-Now*
Definite	3 (4%)	5 (7%)	23 (32%)
Possible	60 (85%)	66 (93%)	48 (68%)
No	8 (11%)	0 (0%)	0 (0%)
Total	71	71	71

Gender of the 71 cases was evenly divided between males (52%) and females (48%). Race was predominantly white (90%). Figure 1 shows that age was evenly divided among age groups. Figure 2 shows that the county of residence was distributed throughout the state. Figure 3 shows the month of onset of illness, which was most often in the late spring and early summer.

Figure 1. Lyme disease in South Carolina cases reported by age group.

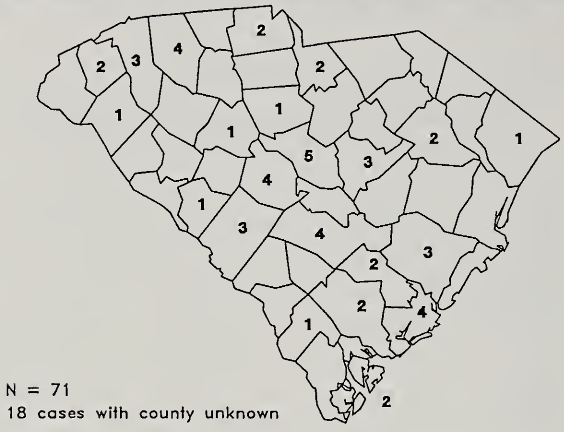


N = 71; 4 CASES WITH UNKNOWN AGE

TICK VECTOR EPIDEMIOLOGY

It is not clear which tick vector is principally responsible for Lyme disease transmission in South Carolina. There has been no published report of a comprehensive tick survey by county in the state. Williams *et al.* collected

FIGURE 2. Lyme disease in South Carolina cases reported by county of residence 1985 - October 1990.



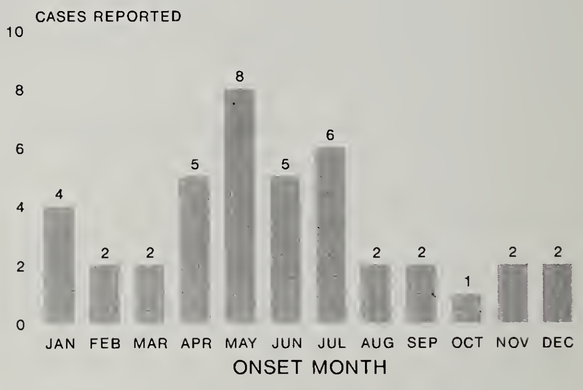
N = 71
18 cases with county unknown

ticks from all three life cycle stages at two sites on the South Carolina coast and found that *A. americanum* and *D. variabilis* were the most abundant species (personal communication, Dr. D. Williams, University of South Carolina, November, 1990). During the summer these accounted for 98 percent of ticks collected. *A. maculatum*, *I. scapularis*, *I. texanus* and *I. marxi* were also present, with *Ixodes* spp. more common in the cooler months. The DHEC Bureau of Laboratories examined ticks removed from humans statewide, with similar results.[11] They found *D. variabilis* 92.4%, *A. americanum* 5.1%, *Rhipicephalus sanguineus* 1.6%, *A. maculatum* 0.6% and *I. scapularis* 0.3%. Barton examined adult and immature ticks removed from hunter-killed deer in 20 South Carolina counties throughout the state in the fall of 1989 (personal communication, Dr. W. Barton, Clemson University, November, 1990). He found that *D. albipictus* (adult and immature) accounted for 72.6 percent of the total tick collection. Adult specimens of the following species were also present: *I. scapularis* 26.8%, *A. americanum* 0.5% and *A. maculatum* 0.1%. *I. scapularis* was collected in 18 of the 20 counties, most predominantly in sandhill and coastal plains counties. None of the *I. scapularis* collected were infected with *B. burgdorferi*.

DISCUSSION

The distribution of the cases of Lyme disease in South Carolina is similar to that of the rest of the country. There is no gender difference, race is predominantly white, and peak onset is in late spring and early summer.[8, 9] The distribution in reported cases by race may reflect greater difficulty in diagnosing ECM on black skin, differential access to medical care, or genetically determined resistance to Lyme disease.

Figure 3. Lyme disease in South Carolina cases reported by onset month



N = 71; 30 cases with unknown onset

South Carolina does have *Ixodes* spp. present in low numbers. *I. scapularis* may be the same species as *I. dammini*, the known vector in other parts of the country. *A. americanum* is another potential vector also present in this state. The true prevalence of infection with *B. burgdorferi* in *I. scapularis* is not known, but is thought to be low. The ability of other ticks more prevalent in South Carolina to harbor the bacteria and efficiently transmit it to humans is also not known, but this mode of spread is thought to be uncommon.

Lyme disease can be difficult to diagnose, which makes accurate reporting difficult. Serology is often used to make the diagnosis, but this is problematic. There is often great interlaboratory variability in determining positive tests.[12, 13] There are no nationwide standardized reference samples. Early diagnosis is a particular problem, as tests are not accurate in the first month. The IgM response peaks in the first three to six weeks, though antibiotic treatment may modify this response.[14] Cross reactivity with *Treponema pallidum*, the etiologic agent of syphilis, can cause false positive tests. Due to these problems, it is recommended that serology alone not be used to make the diagnosis of Lyme disease.[12, 15] In the absence of ECM, clinical diagnosis may be difficult. Epidemiologic investigations are hampered by misclassification of cases and non-cases, as well as the mixture of incident and prevalent cases which occurs when late manifestations are used to make the diagnosis. The importance of reporting cases of Lyme disease and using standard diagnostic criteria is demonstrated by a survey done by Schuman and Caldwell, which found that 90 cases of Lyme disease were diagnosed by physicians in 1988, the year prior to mandatory state reporting. No standard case definition was used, which may result in false positive diagnoses.[16]

Thus, Lyme disease is present in South Carolina, though not as prevalent as in other parts of the country. The tick vector of Lyme disease in South Carolina is thought to be *I. scapularis,* but this remains to be proven. Based on limited scientific data, the prevalence of infection in local ticks with *B. burgdorferi* and the risk to an individual bitten by a tick in South Carolina is thought to be low. Areas of future research include conclusive establishment of the tick vector of Lyme disease in South Carolina and the prevalence of infection with *B. burgdorferi* in local tick populations.

SUMMARY

Lyme disease is present in South Carolina, though not as prevalent as in many other states in the country. The characteristics of South Carolina cases are similar to those of the nation as a whole. The tick vector of Lyme disease in the Southeast is not clearly established, but is thought to be *Ixodes scapularis.* Questions remain concerning the prevalence of infection in local ticks with *Borrelia burgdorferi*, and the risk to a person bitten by a tick in South Carolina. ☐

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MRI UPDATE

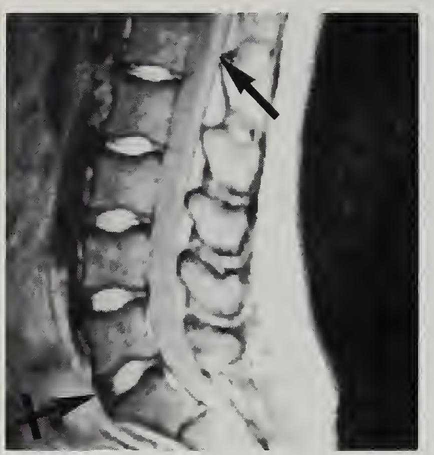
Figure 1

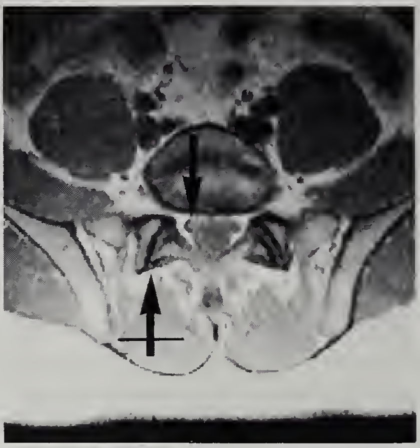
Figure 2

CLINICAL HISTORY: This is a 26-year-old male with back pain and right lower extremity radiation.

FINDINGS: This is an example of a normal study on a young adult. COMMENT: MRI is the screening test of first choice for suspected disorders of the lumbar spine. Notice the clear depiction of the normal L5-S1 disc (figure 1, crossed arrow). The discs of this patient exhibit high signal intensity reflecting normal hydration and none of the discs are narrowed. None of the discs indent the thecal sac which is of intermediate signal intensity and appears as the gray band in the center of the image. The vertebral bodies are homogeneous and free of destructive lesions. The conus medullaris (arrow) is normal. This sagittal image demonstrates the advantages of MRI over other screening modalities. Routine CT scanning will not display the conus medullaris, lesions of which may masquerade as disc herniation. The general area of coverage is superior with MRI. Disc detail is much better displayed with MRI.

The axial image at L5-S1 (figure 2) exhibits delineation of intraspinal detail far superior to that of CT. The right S1 nerve root is clearly displayed (arrow) surrounded by normal perineural fat which is the bright high intensity material in the periphery of the spinal canal. State-of-the-art MR images clearly display the bony anatomy of the lumbar spine including the facet joints (crossed arrow). Degenerative diseases and bony neoplasm are routinely detectable.

MRI involves no ionizing radiation and no intrathecal contrast material is needed. It is a patient-friendly outpatient examination well suited for screening purposes.

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SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION
Joy Drennen, Editor *Contributions welcomed*
798-6207, in Columbia *1-800-327-1021, outside Columbia*

AUGUST 1991

HIGHLIGHTS OF THE JULY 24 BOARD OF TRUSTEES MEETING

The board approved the AIDS Task Force's position statement on consent for HIV testing which says, "The SCMA encourages consent in all situations and strongly recommends written consent (unless the written consent will harm the well-being of the patient) or implied consent for HIV testing as a standard of care for all screening purposes."

The board also approved the development of a consent form for HIV testing for physicians to use with their patients. The AIDS Task Force will work on developing this form.

In addition, the Board endorsed a 25 percent discount on disability insurance to SCMA members from Connecticut Mutual Life Insurance Company. See the *"Gray Matter"* elsewhere in this issue of *The Journal* for details. ❐

MEDICARE UPDATE

Diskettes Available to Compute Impact: RBRVS

The AMA has made diskettes available to the SCMA and our members which can be used to understand the potential impact of the proposed Medicare payment schedule on your practice.

Your office must have an IBM PC or compatible computer and Lotus 123.

Please contact Cindy Osborn or Barbara Whittaker at the SCMA if you are interested in purchasing this software for $12.95.

Certification of Medical Necessity of Home Oxygen

By now you should have received a July Medicare Advisory from BC/BS of SC. Please note that, effective September 1, the physician or an employee of the physician must complete the entire HCFA-484 form, which is the certification of medical necessity of home oxygen. There is other important information in the above mentioned advisory which your office staff should review.

Automated Response Unit (ARU)

A reminder -- your staff can now save time in checking on the status of a Medicare claim by calling the Automated Response Unit (ARU) on a touchtone phone. Generally the ARU is available from 7:00 am to 10:00 pm. Further information, including the special ARU phone numbers, was published in the February, 1991 Medicare Advisory, and an update will be provided by Medicare this month.

New HCFA 1500 Form

Although the new HCFA 1500 form is supposed to go into effect in September, it is still not available as this newsletter goes to press. BC/BS has been informed that you will be able to use the existing form or the new one from September, 1991 until March 1, 1992.

Physician Payment Reform

If you have not yet written or called your Congressman/woman about physician payment reform, it is still important that you do so. Congress is on break until after Labor Day, so you may wish to call or meet your Representative while he or she is at their SC office. For another copy of "talking points" about this issue, please call the SCMA staff.

(Continued p. 2)

Physician Ownership/Referral

On July 26, the Department of Health and Human Services issued regulations regarding physician referrals to facilities in which they have ownership. These regulations became effective July 29; although the SCMA has not had an opportunity to review them yet, it is our understanding that they permit physicians to refer Medicaid and Medicare patients to facilities in which physicians have ownership interest, as long as they own less than 40 percent of the business and that no more than 40 percent of the facility's revenues come from these referrals. The rules specify 11 safe-harbor business arrangements which are exempt from prosecution.

For a copy of these rules, please contact Barbara Whittaker or Jenifer Dobbs at the SCMA. ❒

NEW CDC HIV/HBV RECOMMENDATIONS

The CDC has released the following recommendations for preventing transmission of HIV and HBV between healthcare workers and patients:

- All healthcare workers should adhere to universal precautions. Healthcare workers should also comply with current guidelines for disinfection and sterilization of reusable devices used in invasive procedures.

- Current data provide no basis for recommendations to restrict the practice of healthcare workers infected with HIV or HBV who perform invasive procedures not identified as exposure-prone, provided that the healthcare worker complies with the universal precautions.

- Exposure-prone procedures should be identified by medical/surgical/dental organizations at which the procedures are performed.

- Healthcare workers who perform exposure-prone procedures should know their HIV antibody status. If they do not have serologic evidence of immunity to HBV, they should also know their HBsAg status and, if that is positive, their HBeAg status.

- Healthcare workers who are infected with HIV or HBV should not perform exposure-prone procedures unless they have sought counsel from an expert review panel and been advised under what circumstances, if any, they may continue to perform these procedures. Such circumstances would include notifying prospective patients of the healthcare worker's seropositivity before they undergo exposure-prone Invasive procedures.

- Mandatory testing of healthcare workers for HIV antibody, HbsAg or HBeAg is not recommended.

The SCMA is working on a program to help physicians and hospitals comply with the CDC guidelines and will provide information as soon as it is finalized.

If you would like to have a copy of the complete CDC report, contact Jenifer Dobbs at SCMA Headquarters. Ask for the CDC "Recommendations for Preventing Transmission of HIV and Hepatitis B Virus to Patients During Exposure-Prone Invasive Procedures." ❒

AMA UPDATE

AMA Urges Publication of PRO Reviewer Identities

The AMA is urging the federal government to open up the PRO process so physicians will know the identities of those reviewing their work. The AMA believes HCFA should require PROs to publish annually the names of physician reviewers, their credentials and specialties. Organized medicine also wants reviewers to reveal their identities by signing the letters submitted to physicians under review.

AMA Joins Board of UR Accreditation Group

The AMA has joined the board of the Utilization Review Accreditation Commission (URAC) which will establish uniform and consistent utilization review standards in order to eliminate some of the more onerous practices of the business.

URAC's success will depend in part on how many UR firms voluntarily adopt its review and appeal guidelines. While smaller UR firms may resist accreditation, the presence of the National Association of Insurance Commissioners on the board may motivate their compliance, if only to forestall state regulation.

URAC's board also includes representatives from provider, insurance, business and review trade groups, as well as a union. ❒

UPCOMING PROGRAMS/CONFERENCES

11th Annual Conferences for Trustees, Administrators and Physicians

The 11th Annual TAP Conference will be held September 19-21, 1991 at the Mariner's Inn, Hilton Head Island, SC. The conference is sponsored by the SCMA, the SC Hospital Association and the SC Association of Hospital Governing Boards.

The theme of this year's conference is "The Quest for Quality." Some of the topics to be addressed include "Issues of the 90s for Healthcare Leaders;" "What Kind of Life?" dealing with the present crisis in controlling healthcare costs; "The Quest for Quality," focusing on examples of actions taken to provide quality care; "Why all the Talk about Advance Healthcare Directives;" "New Directions for Hospitals and Medical Staffs;" and "The ABC's of Medical Director."

The registration fee is $190 per person and includes a beach party on Thursday evening, continental breakfasts, a reception on Friday evening and luncheon on Saturday.

For additional information, contact Doris Clevenger, SC Hospital Association, PO Box 6009, West Columbia, SC 29171-6009, 796-3080. ❐

Risk Management Program for New Physicians

A risk management program sponsored by the JUA/SCMA Physicians' Risk Management Committee for new physicians will be held on Thursday, September 26, 1991 at SCMA Headquarters in Columbia from 2:00 to 5:00 pm. This is the second such program offered to physicians who are just beginning their practice. Attendance will entitle such physicians to a 50 percent discount on their first year's liability insurance premium and a 25 percent on the second year's premium.

Topics will include talks on risk management prophylaxis in office practice, attorney/physician relationships, how to give a deposition, testifying in court, and hospital risk management.

The SCMA is located at 3210 Fernandina Road in Columbia, on the frontage road at I-26 and St. Andrews Road.

If you are in your first year of practice or in your last year of residency training and would like to attend this program, please call Joy Drennen at SCMA Headquarters in Columbia. Preregistration is required as seating is limited. There is no registration fee. ❐

REPORT FROM SCMA YOUNG PHYSICIANS' SECTION

The annual meeting of the AMA Young Physicians' Section was held June 21-22, 1991, with the following resolutions considered, forwarded to and acted upon by the AMA House of Delegates. Substitute Resolution 128 dealt with equitable Medicare reimbursement for young physicians and was supported favorably by the AMA HOD. Specifically, strong support of HR 1898 in Congress was urged.

Another resolution dealt with freedom of communication between physicians and patients; this resolution was fueled by recent court rulings prohibiting discussion of abortion with patients in federally funded clinics. The AMA HOD condemned any interference by the government compromising the medical judgment of physicians.

The Section also voiced opposition to HCFA balance billing limitations and potential adverse impact on elderly patients' access to care. It was supported by the AMA HOD.

Other resolutions called for: reform of physician payments for home visits; the AMA to develop guidelines for care of patients by physicians with communicable diseases of any sort (not limiting disease to HIV infection); efforts to allow individuals to block "caller ID" features on telephones, at no cost to the caller (this is to cover the case of a physician calling a patient from an unlisted number and having the patient access the unlisted number); and for the AMA to integrate into its media and outreach efforts to the public, information focusing on the extensive qualifications and training of physicians relative to other "healthcare providers."

The reference committee on Constitution and Bylaws drew particular interest from the YPS. Constitution and Bylaws Report B recommended that the AMA Bylaws be changed to allow only one nominee for vacant Council positions. The YPS felt this represents a potential barrier to younger physicians and so testified at committee hearings. The report was referred back for further consideration.

(Ed. Note: This report submitted by SCMA Delegate to the AMA YPS, Gerald E. Harmon, MD.) ❐

FROM THE OFFICE OF LEGAL AFFAIRS

Regulations pursuant to the S.C. Infectious Waste Act have been finalized and were published on June 28, 1991. All generators of infectious waste are required to register with DHEC before September 26, 1991. Virtually every SC physician in private practice must register.

Physicians generating less than 50 pounds of infectious waste per calendar month are given favorable exemptions from the majority of these extensive regulations, provided the physician does not contract with a private firm to transport and dispose his infectious waste.

Under the final regulations, physicians generating less than 50 pounds of infectious waste per month are termed "small quantity generators." This group of physicians is only mandated to dispose of the following waste materials in a particular manner:

- Sharps, including needles, syringes, pipettes, lancets, broken glass and scalpel blades must be contained in rigid puncture-resistant containers and may then be disposed of as other solid waste.

- Cultures and human blood products must be treated (disinfected). The liquid may then be discarded by way of an approved sanitary sewer system.

- All other infectious waste may be disposed of as other solid waste after being properly packaged in a manner which prevents exposure to solid waste workers and the public.

Small quantity generators may transport their own waste for disposal, provided no more than 50 pounds are transported at any one time, the waste is properly packaged and labeled, and the waste is not transported in the passenger compartment of a vehicle.

If a small quantity generator offers infectious waste for transport off-site at a commercial treatment facility, the physician will be required to comply more fully with the regulations regarding segregation, initiation of a manifest, and packaging requirements.

For purposes of determining eligibility as a "small-quantity generator," the 50-pound limit applies to individual physicians. Thus, a group practice of three physicians could generate 150 pounds of infectious waste per calendar month and qualify as a "small quantity generator." For small quantity generators, there is no fee associated with registration. Registration must be renewed every five years.

For further information and registration forms, contact Mr. Phil Morris at DHEC at 734-5448 in Columbia. ❐

CAPSULES

At the August meeting of the SC Chapter of the American Academy of Pediatrics, three South Carolinians were honored. Named Child Advocate of the Year was the Honorable Nell W. Smith, Senator from Pickens County. Senator Smith was recognized for her contributions to the health and well-being of the children of SC and for her achievements on their behalf. Benjamin O. Stands, MD, was presented the Career Achievement Award for his superior accomplishments in the medical field; and William F. Young, MD, received the President's Award for his outstanding service to the chapter, its activities and the children of the state. ❐

WOMEN IN MEDICINE MONTH

The AMA has designated September as *Women in Medicine Month* -- a time to focus on bringing more women physicians into the mainstream of organized medicine.

The AMA and SCMA are diverse organizations, but cohesive ones, representing a diverse and colorful spectrum of personalities, politics, training and practice philosophies. These organizations also seek to identify the common threads that ultimately bind the profession into a cohesive force for the good of medicine and the well-being of those it serves. Encourage your women colleagues to discover how their career and professional lives can be enhanced by membership in organized medicine. Call the SCMA office today for information on joining the SCMA and AMA. Ask for Joyce Jenkins in the Membership Department. ❐

1990 SOUTH CAROLINA PHYSICIAN SURVEY OF TICK, SPIDER AND FIRE ANT MORBIDITY*

STANLEY H. SCHUMAN, M.D., Dr. P.H.**
SAMUEL T. CALDWELL, M.A.

The Clemson University/Medical University of South Carolina Agromedicine Program is a statewide resource for agricultural medicine. Services are provided to the agricultural community, consumers and to health professionals. Morbidity from insects is of concern to farm and forestry workers because of their year round outdoor activity. Clients of the Cooperative Extension Service are frequently referred to the Agromedicine Program for information on the health effects of insect stings and bites. Growers, foresters and civic organizations are provided with Agromedicine Program literature and lectures on insect health effects.

The authors' interest in the epidemiology of insect morbidity in South Carolina first began with the red imported fire ant (RIFA) in 1986.[1] This progressed to tick-borne disease in 1988.[2] Both studies were prompted by numerous inquiries from citizens who had experienced real or suspected health effects from RIFA and ticks. During 1990 program staff responded to a number of inquiries regarding bites from black widow and brown recluse spiders.

A review of the literature failed to identify spider morbidity data for South Carolina. This prompted the authors to survey all primary care physicians for reports of black widow and brown recluse spider bites and for updated reports on RIFA and tick-borne disease morbidity.

METHODS

A questionnaire with postage-paid return envelope was mailed to a total of 2,366 physicians in South Carolina whose practice was identified in the 1989-1990 Directory of the State Board of Medical Examiners as family practice, internal medicine, pediatrics, general practice, emergency medicine and occupational medicine. The physicians were asked to estimate the number of patients treated in 1990 for Rocky Mountain spotted fever (RMSF), Lyme disease, black widow and brown recluse spider bites and RIFA stings. All patients were classified by age and need for hospitalization. Cases were further classified by confirming laboratory test for tick-borne disease, treatment received for brown recluse spider bites and severity of RIFA stings. Reports of mortality were also requested from the physicians. Case definitions or exclusions were not provided to the physicians in order to be consistent with our previous studies.[1, 2] For example, it is difficult to keep up with the frequently changing criteria issued by the Bacterial Zoonoses Branch of the CDC.[3]

RESULTS

The survey population was reduced to 2,224 because 142 physicians had moved, retired, died or stated they were no longer working in patient care. A total of 902 physicians (40.6 percent) responded to the initial survey. A follow-up survey of 10 percent of the non-responders was performed to determine whether the non-responders differed from the responders. This procedure increased the total response rate to 42.3 percent (n = 940) and reduced the survey population by two to 2,222. The non-responders were judged to be similar to the responders. Sixty-six percent of the initial responders reported treating one or more cases as compared to 68 percent of the follow-up responders. The average number of cases per physician who reported one or more cases for each disease category were almost identical between the initial survey responders and the follow-up responders. The disease category and average number of cases by initial/follow-up responder are as follows; RMSF 2.5/1.0, Lyme disease 1.8/1.8, black widow 1.3/1.5, brown recluse 2.2/2.4 and RIFA 11.3/10.0.

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Respondents reported 748 cases of tick-borne disease in South Carolina for 1990; 414 cases of RMSF and 334 cases of Lyme disease (Table 1). Serological confirmation was reported for 31 percent of the RMSF cases and for 45 percent of the Lyme disease cases. Children 14 years of age and younger accounted for 33 percent of the RMSF cases and 23 percent of the Lyme disease. Thirty-one percent of the RMSF cases required hospitalization as compared to eight percent of the Lyme disease cases. Physicians reported two deaths, both adults, from RMSF. Seventy-one percent (n = 295) of the cases of RMSF were concentrated in eleven counties located in the northwest and northeast; Anderson = 57, Cherokee = 4, Chester = 7, Fairfield = 1, Greenville = 51, Lancaster = 5, Laurens = 3, Oconee = 4, Pickens = 12, Spartanburg = 66 and York = 85. Reports of Lyme disease were more evenly distributed in the state. Three counties (Richland, Charleston and Colleton) accounted for 32 percent of the cases (n = 107).

TABLE 1

PHYSICIAN REPORTS OF TICK-BORNE DISEASE IN SOUTH CAROLINA, 1990

		Cases		*Hospitalized*		*Lab Confirmed*		
Disease	*Total*	*<14 Age*	*>15 Age*	*<14 Age*	*>15 Age*	*<14 Age*	*>15 Age*	*Deaths*
RMSF	414	136	278	23	70	32	97	2
Lyme disease	334	78	256	10	16	25	125	0
Total	748	214	534	33	86	57	222	2

A total of 621 patients were reported to have sought treatment for black widow and brown recluse spider bites in the state during 1990 (Table 2). The brown recluse spider accounted for the majority of cases (77 percent). About 80 percent of the patients in both spider categories were 15 years of age or older. Hospitalizations were the same for adults and children within each spider category; 35 percent for black widow spider bites and six percent for brown recluse. Physicians were queried on specific treatment for brown recluse spider bites. Only nine percent of the patients required excision of necrotic tissue while 10 percent received Dapsone,® an anti-necrotic sulfone, which has been reported to be of specific benefit for brown recluse spider bites. Two deaths from black widow spider bites were reported. The northwestern counties (Anderson, Cherokee, Greenville, Laurens, Oconee, Pickens and Spartanburg) reported the most cases of spider bites; 58 for black widow (41 percent) and 188 for the brown recluse (39 percent). Greenville County led the state in total reports of spider bites (n = 94).

TABLE 2

PHYSICIAN REPORTS OF BLACK WIDOW AND BROWN RECLUSE SPIDER BITES IN SOUTH CAROLINA, 1990

		Cases		*Hospitalized*		
Spider	*Total*	*<14 Age*	*>15 Age*	*<14 Age*	*>15 Age*	*Deaths*
Black Widow	143	22	121	8	41	2
Brown Recluse	478	78	400	5	22	0
Total	621	100	521	13	63	2

TABLE 3

PHYSICIAN REPORTS OF RED IMPORTED FIRE ANT CASES IN SOUTH CAROLINA, 1990

Patient Age	*Total*	*Treated in Office*	*Treated in E.R.*	*Hospitalized*	*Anaphylaxis*	*Referred to Allergist*	*Deaths*
<14	2,366	1,909	387	8	27	70	0
>15	2,609	2,108	440	19	77	100	1
Total	4,975	4,107	827	27	104	170	1

Table 3 lists 4,975 cases of RIFA stings treated by the respondents in 1990. Cases were classified by location of treatment with those treated in physician offices representing 81 percent of the total. Sixteen percent of the children and adults were treated in emergency rooms while less than one percent of the cases were severe enough to require hospitalization.

Anaphylaxis was experienced by 2.1 percent of the patients and 3. 4 percent were referred to an allergist for desensitization. One adult was reported to have died from a fire ant sting. The central. eastern and southern counties accounted for 86 percent of the cases. Only three counties had no reports for RIFA (Abbeville. Pickens and Union).

DISCUSSION

Physician reports of tick-borne disease in 1990 increased over the 1988 reporting period[2] with RMSF up by 20 percent (344 to 414) and Lyme disease increasing by 271 percent (90 to 334). The patient age distributions were about the same for the two reporting periods. There was an apparent shift in case severity requiring hospitalization. Thirty-five percent of the RMSF patients were hospitalized in 1988 as compared to 23 percent in 1990. Hospitalizations for Lyme disease decreased from 20 to eight percent. Forty-five percent of the Lyme diseases cases were reported to be serologically confirmed in 1990 as compared to 38 percent in 1988. As in the previous period. two deaths from RMSF were reported in 1990. Reasons for the reported increases in RMSF and Lyme disease are not clear. Possibilities include greater awareness by physicians. increased outdoor leisure activities and spread of the infection in the tick population and natural hosts.

The reports of black widow and brown recluse spider bites described in this paper are the first attempt to document the prevalence of these cases in South Carolina. The reader is advised to view these cases with caution as there are no diagnostic tests for confirmation. Case definitions were not provided to the survey physicians and it should be assumed that the respondents had few opportunities to observe the spiders. A Clemson University entomologist[4] suggests that spiders in the genus chiracanthium. which are found throughout the United States. may be responsible for a portion of the brown recluse reports as they cause similar reactions in humans.

There were fewer reports of patients seeking medical attention for RIFA stings in 1990 as compared to 1986.[1] This may be the result of a lower physician response rate. 42.3 percent versus 50.7 percent. The decrease in number of reports may also reflect more knowledgeable victims who may not be as quick to seek medical attention for fire ant stings as they were in their first encounters. The percentages of patients treated in the office. emergency room and in the hospital were similar between the two studies. A total of 104 patients (2.1 percent) were reported to have experienced anaphylaxis. This percentage agrees with other estimates for RIFA anaphylaxis in the literature.[5] One death from RIFA anaphylaxis was reported in an 85-year-old stroke victim. This case represents the first reported RIFA death in the state.[6]

What do physician responses to a mail questionnaire represent? Certainly not the specificity of a case report of communicable disease to the health department with accompanying laboratory documentation. At the present time. guidelines from the Department of Health and Environmental Control should be followed and improved case-reporting practiced. In the absence of a useful. primary care office laboratory test for Lyme disease or RMSF. clinicians are making a presumptive clinical diagnosis for the advantage of early treatment and the disadvantage of nonspecificity. These data represent. at best. a consistent (but not research documented) tally of cases being presumptively diagnosed and treated ranging from the spider bite necrosis (in the absence of the spider specimen) to the clinical signs of Lyme disease (in the absence of a highly specific and sensitive serologic test).

SUMMARY

A population of 2.366 primary care physicians in South Carolina was surveyed by mail to estimate the number of cases of insect morbidity treated in 1990. A response rate of 42.3 percent was obtained. Cases reported totaled 414 for Rocky Mountain spotted fever. 334 for Lyme disease. 143 black widow and 478 brown recluse spider bites and 4.975 fire ant stings. These are counts of cases from a mail survey. not from a research-based study. Five deaths were also reported: two for Rocky Mountain spotted fever. two due to black widow spider bites and one fire ant anaphylaxis. ☐

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NON-LYME DISEASE

CHARLES S. BRYAN, M.D.*

Wide publicity and protean manifestations make Lyme disease something of a preoccupation with the American public. The diagnosis is straightforward when the characteristic rash (erythema migrans) follows a tick bite. However, cases without physician-verified erythema migrans pose a dilemma. On the one hand, *Borrelia burgdorferi*—like its distant spirochete relative *Treponema pallidum*—is a subtle pathogen capable of masquerading under many guises. On the other hand, definitive therapy for late manifestations requires high-dose, intravenous ceftriaxone or penicillin G for 14 to 21 days. Such therapy is quite expensive; therefore, the diagnosis should not be made casually.

More than 90 percent of Lyme disease cases in this country have been reported from nine states: Connecticut, Rhode Island, Massachusetts, Wisconsin, Minnesota, New York, New Jersey, Pennsylvania, and California.[1] Elsewhere, suspected cases far outnumber cases in which the diagnosis can be supported by strict criteria. Serologic testing for antibodies to *Borrelia burgdorferi* is fraught with problems, including frequent false-positive results. Often, there is little or no agreement between one laboratory and the next.[2] And the incidence of serologic testing seems to be rising much faster than the incidence of the disease.

TABLE 1

FOUR SYNDROMES OF NON—LYME DISEASES

	Suggestive History	*Positive Serology*
Type 1	Present	Absent
Type 2	Absent	Present
Type 3	Present	Present
Type 4	Absent	Absent

The purpose of this paper is to define what appear to be four distinct syndromes of non-Lyme disease based on the presence or absence of a suggestive history or a positive serologic test result.

CASE REPORTS

Case 1 (Suggestive History, Negative Serology)

After extracting a tick from her groin, a 55-year-old woman noted a 2 cm "sore" followed one week later by chills, fever, and malaise. She continued to be symptomatic with increasing malaise and occasional nausea and headaches. *B. burgdorferi* antibodies were absent. Several courses of antibiotics, primarily tetracycline, were without benefit.

Nine months later, she was evaluated for suspected Lyme disease. Physical examination was unrevealing except for a continuous grade II-III/VI murmur at the left base consistent with a known asymptomatic patent ductus arteriosus. *B. burgdorferi* antibodies were again absent, but six of six blood cultures revealed a viridans streptococcus susceptible to penicillin G at 0.03 mcg/ml and to all other antibiotics tested except tetracycline. She was treated with intravenous penicillin G for four weeks (along with gentamicin for the first two weeks). During two years of follow-up, she has been generally well although continuing to experience low-grade fatigue. The sedimentation rate returned to normal and blood cultures have remained sterile.

Comment. The history strongly suggested Lyme disease as a possibility. The patient described a rash resembling erythema migrans, but this was not physician-verified. Fortuitously, symptoms ultimately attributed to bacterial endarteritis on a patent ductus arteriosus began shortly after the tick bite.

Although *B. burgdorferi* antibodies were absent in this case, bacterial endocarditis has recently been added to the list of conditions associated with false-positive serologic tests

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for Lyme disease.[3] Presumptive therapy for Lyme disease with tetracycline derivatives can mask the diagnosis of endocarditis leading to such disastrous consequences as systemic emboli, valve destruction and emergence of resistant microorganisms.

Case 2 (Positive Serology without Suggestive History)

After watching a television show, family members suggested to a 60-year-old man with an eight-year history of rheumatoid arthritis that he have a serologic test for Lyme disease obtained. The result was positive at a titer of 1:256 by the indirect fluorescent antibody (IFA) method. He was referred for further evaluation.

Past medical history was unremarkable except for the diagnosis of rheumatoid arthritis supported by a positive test for rheumatoid factor. There was no history of erythema migrans, and there were no symptoms or signs suggestive of late manifestations of Lyme disease except for arthritis. *B. burgdorferi* antibodies were not demonstrated by an enzyme-linked immunosorbent assay (ELISA) performed at a research laboratory.

Comment. False-positive serologic results for *B. burgdorferi* antibodies occur not only in rheumatoid arthritis, but also in other connective tissue diseases, various neurologic disorders, syphilis, and even in healthy persons without evidence of disease.[4] A history of well-documented rheumatoid arthritis facilitated recognition of the false-positive result in this instance. However, this distinction can be quite difficult when a "positive Lyme titer" is obtained early in the course of a rheumatic illness. Immunoblotting (reminiscent of the Western blot test to confirm positive screening serologic results for the human immunodeficiency virus) is useful for separating "true-positive" from "false-positive" results.

Recently, it was reported that a two-week course of intravenous ceftriaxone seemed to bring about improvement in patients with diverse types of chronic inflammatory arthritis and positive serologic results for Lyme disease, even in low titer.[5]

This experience adds to the tantalizing evidence that many forms of arthritis including rheumatoid arthritis may reflect immunologic response to occult infection.

Case 3 (Suggestive History and Positive Serology)

A week after extracting a tick from her abdominal wall, a 47-year-old woman noted an irregular zone of sharply-demarcated erythema 15 cm in greatest diameter. She requested that her husband, a physician, obtain a serologic test for Lyme disease. This was positive at 1:128 by the IFA method.

Doubting that the erythema was in fact erythema migrans (the skin was red but otherwise unremarkable), the patient's husband chose to ignore the test result. Over the course of a week, the erythema resolved. She later recalled that the area of skin in question had come into contact with paint thinner.

Comment. Erythema migrans (previously called erythema chronicum migrans) usually begins as a red macule or papule at the site of a tick bite and expands over days to weeks to a large, generally round lesion with bright red outer borders and partial central clearing. The centers may be indurated and—in early cases—vesicular or necrotic. It is a large lesion; at least 5 cm of erythema are required for surveillance purposes and the average lesion measures 15 cm in greatest diameter. Nearly one-half of patients develop annular secondary skin lesions.

This case again illustrates that healthy persons can have positive serologic tests for *B. burgdorferi* antibodies. A more common presentation of "suggestive history with false-positive serology" consists of malaise and arthralgias without objective evidence of arthritis and with no history of erythema migrans. When to treat such patients with antibiotics for possible Lyme disease remains a dilemma (see discussion).

Case 4 (Negative Serology, Non-Suggestive History)

Seen in consultation for suspected chronic Epstein-Barr virus infection, a 27-year-old woman gave a three-year history of fatigue, low-grade temperature elevations, lightheadedness, headaches, and occasional arthralgias. There was no history of tick bite or erythema migrans. Physical examination was unrevealing, as were selective laboratory tests. Psychologic testing suggested moderately severe depression, histrionic personality, and somatization.

Antidepressant medication and psychologic counseling were recommended. One year later, she returned and requested—on the basis of extensive reading—that serologic testing for Lyme disease be carried out in a reference laboratory. Antibodies against *B. burgdorferi* were not demonstrated.

Comment. The chronic fatigue syndrome is a common and difficult problem in today's clinical practice.[6] Understandably, patients with this syndrome often pursue the possibility of a treatable disease entity. Patients with well-documented Lyme disease can, at various stages, experience debilitating fatigue. However, Lyme disease without other objective manifestations does not appear to explain cases of either the chronic fatigue syndrome or the fibromyalgia syndrome.[4]

DISCUSSION

There are numerous variations on the theme of non-Lyme disease. Most patients, however, seem to fit into one of these four categories. Some trace the onset of their symptoms to a tick bite; others are found unexpectedly to have a positive serologic test; others have suggestive symptoms and a positive serologic result but the findings are nonetheless unconvincing; and still others relentlessly pursue the diagnosis of Lyme disease as a treatable cause of their complaints.

For national surveillance purposes, Lyme disease is currently defined by erythema migrans or—in the absence of erythema migrans—at least one late manifestation combined with laboratory confirmation. Acceptable late manifestations are shown in Table 2. These criteria err toward stringent diagnosis for disease surveillance purposes.[7] Until a highly sensitive and specific laboratory test becomes available, patients without physician-verified erythema migrans will continue to present therapeutic dilemmas. Presumptive therapy with doxycycline is reasonably innocuous provided that it does not obscure treatable diagnoses such as endocarditis. However, it may be both prudent and cost-effective to reserve high-dose intravenous ceftriaxone or penicillin G therapy for those patients in whom Lyme disease seems much more likely than its alternative: non-Lyme disease.

TABLE 2

LATE MANIFESTIONS ACCEPTABLE FOR THE DIAGNOSIS OF LYME DISEASE *IN THE ABSENCE OF ALTERNATIVE EXPLANATION**

MUSCULOSKELETAL: Recurrent, brief attacks (lasting weeks to months) of objective arthritis with joint swelling in one or several joints followed by chronic arthritis in one or several joints. *Not acceptable*: chronic progressive arthritis without previous brief attacks; chronic symmetric polyarthritis; arthralgia; myalgia; fibromyalgia

NERVOUS SYSTEM: Lymphocytic meningitis; cranial neuritis (especially facial palsy); radiculoneuropathy; or encephalomyelitis with *B. burgdorferi* antibodies in higher titers in CSF than in serum. *Not acceptable*: headache, mildly stiff neck, fatigue, paresthesias

CARDIOVASCULAR SYSTEM: Acute-onset, second- or third-degree heart block resolving in days to weeks and sometimes accompanied by myocarditis. *Not acceptable*: palpitations, bradycardia, first-degree heart block, bundle branch block, or myocarditis alone

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*Modified from Rahn DW, Malawista SE: Lyme disease: recommendations for diagnosis and treatment. Ann Intern Med 1991; 114: 472-481.

SUMMARY

Four syndromes of non-Lyme disease are described on the basis of the history and serologic test result. Recognition of non-Lyme disease enables the physician to avoid unnecessary treatment and to keep considering the possibility of alternative diagnoses. ☐

ACKNOWLEDGEMENT

I thank Dr. Allen C. Steere for performing the serologic tests in several of these cases.

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Editorials

DIED ON THE FOURTH OF JULY

The frustrations of medical practice are more than offset by those patients who do far more for us than we do for them. As this issue went to press, I re-learned this truism.

He served his country: two tours of ground combat duty as a sergeant in South Vietnam. Then in January 1985, he underwent heart valve replacement and received a unit of HIV-positive blood. It fell my lot to break the news. He took it without flinching, like a man.

For four years, I always felt a bit brighter after seeing him during the follow-up visits. He seldom complained. Often, his wife came with him to make sure that he "told the doctor everything." He gave ground but did not surrender.

I went out early that morning and hung the American flag. Then I called the nursing station and learned that he had died. I lowered the flag to half-mast.

—CSB

LYME DISEASE: HOW COMMON IN SOUTH CAROLINA?

In this issue of *The Journal* are two disparate accounts of the incidence of Lyme disease in our state. Which should we believe?

Drs. Rumpel and Jones tabulated cases reported to the Department of Health and Environmental Control (DHEC). Only 71 cases were logged in between 1985 and August 1990, and only three of these met the strict criteria of the original Centers for Disease Control (CDC) definition. That definition required the characteristic rash (erythema migrans) along with other organ system involvement and a positive serology. In June 1990, the CDC criteria were liberalized to include cases without erythema migrans. Still, the majority of cases failed to meet the definition.

Dr. Schuman and Mr. Caldwell from the Agromedicine Program (a joint effort between the Medical University of South Carolina and Clemson University) conducted a survey of practicing physicians and received 940 responses. These responses indicated 334 cases of Lyme disease during 1990 alone—nearly five times as many as were reported to DHEC over more than five years! The authors note that their counts are "from a mail survey, not from a research-based study" and that physicians were not given case definitions or exclusions.

Both pairs of authors are aware of methodologic shortcomings. Doctors Rumpel and Jones recognize only too well that physicians often forget to report notifiable diseases even when required to do so by law. Dr. Schuman (personal communications) is similarly aware that over-estimations may result from a system based on asking, "How many cases have you seen?" Future surveys might request the names of patients and information about surveillance criteria actually met. But such a requirement would no doubt result in fewer responses. We should congratulate both sets of investigators for taking on this problem (and Dr. Schuman and Mr. Caldwell also deserve credit, of course, for tackling the epidemiology of other vector-borne diseases).

But, meanwhile, are there any solutions? We must find ways for more effective, efficient disease reporting!

Perhaps the day will come when physicians' offices will be able to provide accurate disease reporting through computer linkups with DHEC, medical schools, and/or other organizations. The technology already exists. Accurate disease reporting continues to be a major problem. Predictably, primary care physicians and subspecialty or tertiary care physicians will have different epidemiologic perspectives based on their respective stations along the firing line, but as physicians, we are *all* part of the problem. We need to be a better part of the solution. But in the meantime, what is the true incidence of Lyme disease in South Carolina?

I suspect that even the DHEC data may overestimate the number of bona fide cases of Lyme disease in South Carolina over the past six years. I base this suspicion—a suspicion only—on the observation that only 13 of the 71 cases, or 18 percent, had erythema migrans (although possibly more since the presence or absence of erythema migrans was not noted on every case report form) (Dr. Jones, personal communication). Most authorities tell us that erythema migrans occurs during 50 to 80 percent of cases. Also, informal surveys of rheumatologists and infectious disease specialists suggest that well-documented cases of Lyme disease acquired in South Carolina continue to be distinctly uncommon.

Separating disease from non-disease is a frequent, often thorny problem in day-to-day medical practice. I wrote the paper on "Non-Lyme Disease" for that reason; the cases reported are merely representative and similar cases could probably be drawn from any large medical practice. For one reason or another, some patients seem determined to go from one physician to the next until someone makes an *ex cathedra* diagnosis of Lyme disease. Until an extremely sensitive and specific test becomes widely available, who is to say for sure?

Given these uncertainties, what should be the standard of care? In the early stages of suspected Lyme disease, it seems reasonable to err toward oral antibiotic therapy (e.g., doxycycline) provided that appropriate studies are obtained to exclude other conditions (e.g., at least two sets of blood cultures when there is reason to suspect endocarditis). For late manifestations, I recommend proceeding with caution and making reference to the strict criteria (see Table 2 of my paper on "Non-Lyme Disease"). To an increasing extent, many authorities advocate ceftriaxone (Rocephin) as the gold standard for treatment of late complications; a representative charge for outpatient therapy with ceftriaxone (2 grams IV daily for 14 days) approaches $4,000. And there is little or no guarantee that such therapy will be curative.

Caveat emptor!

—CSB

The following guest editorial by Dr. Coker of Manning expresses the frustrations of a primary care physician in a climate in which documentation sometimes seems to take priority over patient care. Guest editorials reflect the opinions of the authors and do not necessarily reflect the opinions of the officers and trustees of the South Carolina Medical Association.

—CSB

"PLAYING THE GAME"

In an effort to dispel any ideas of plagiarism on my part I readily acknowledge that I did title this little piece after a poem written by the famous Grantland Rice many years ago relating athletics to the "game" of life. As many of you will likely recall, the closing line was, "It matters not whether you win or lose but how you play the game." It would seem that the motto of the bureaucracy which oversees the practice of medicine in the hospitals of this country today might be, "It matters not whether the patient lives, dies or gets well but how the doctor plays the game of documentation."

Physicians practicing medicine in the 90s under the various HCFA regulations as put forth through the DRG program, the PRO program, the local PRO organization, etc., are laboring under considerable duress. In this "game" the physician/patient relationship has become a minor factor in the overall picture of what used to be known as medical care. Historically the physician/patient relationship has been a hallowed and trusting relationship. The above mentioned programs have done much to diminish the meaning of that special relationship which, as I see it, is the very essence of the art of medicine. This relationship is revered by me and probably by most of us who give serious thought to caring for sick patients.

In recent years I have heard repeatedly from UR coordinators, PRO reviewers, including M.D. reviewers, etc., the expression "You just have to play the game" or "Documentation is the name of the game." I take umbrage to the concept of playing a "game" with patient care and prefer to take very seriously that rather awesome responsibility.

As a physician I hope that no one would feel that I was playing a "game" in caring for people. Rather, that I am participating in the very serious matter of taking care of ill patients who have real physical and emotional needs. I feel that these matters of care need to be addressed in a very serious, caring, compassionate manner. This is, as I see it, the very antithesis of "playing a game."

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Letter to the Editor

To The Editor:

Recently in the lay press, there has appeared a multitude of misleading and false information regarding implants for breast contouring and breast reconstruction. This has caused anxiety in many patients and is of great concern to us. The facts show that this anxiety is unwarranted.

The first controversy concerns implants covered with polyurethane, primarily used for breast reconstruction. In 1979 the FDA classified polyurethane implants as Class II, (performance standard). In 1988 polyurethane implants were classified to Class III (pre-market approval). The necessary studies have been done by the manufacturers. The FDA has conducted its own studies and will release those results possibly this summer. The chemical TDA (which is a potential breakdown product of polyurethane) has been shown to cause cancer in animals only in amounts much higher than would be received from breast implants. This was stated by Elizabeth Jacobson, Ph.D., Deputy Director of the FDA's Center for Device and Radiological Health. Department of Health and Welfare, Canada is advising women that the risk of cancer from polyurethane implants is so slight that it can be equated to having smoked one and a half cigarettes in a lifetime. These implants have been very important to our plastic surgery armamentarium because they have associated with them, the least capsules and the best long term results.

The second controversy concerns the concept that silicone implants may cause or exacerbate connective tissue disorders such as lupus and scleroderma. A recent report by Professor Rose from Johns Hopkins University concluded that there was no conclusive evidence at this time that the silicone from breast implants is related to the development of connective-tissue disease. Silicone is not an adjuvant but simply an inert substance that elicits a foreign body reaction.

Implants certainly have potential problems including capsule formation, foreign body reaction, and infection. Monitoring of other potential problems will be done vigorously. However, the recent publicity is unjustified and damaging to our patients. It is particularly disturbing that reports by Connie Chung and Geraldo on television, resort to sensationalizing the issues without reporting the facts.

Sincerely,

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and
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President's Page

REACTIVE OR PRO-ACTIVE MEDICINE

Why is medicine always on the defensive? Why do we repeatedly find ourselves opposing some law or regulation? Organized medicine is criticized for being reactive rather than pro-active. What's the reason? What can be done about it?

The ongoing controversy concerning HIV testing of physicians is a good example. In its long-awaited guidelines, the Centers for Disease Control recommended that healthcare workers who perform "exposure-prone" invasive procedures should know their HIV and HBV status. Mandatory testing of healthcare workers was not recommended. Three days later the Senate passed two bills on HIV, including one that makes it a federal crime for an HIV-infected physician to perform any invasive procedure without telling the patient first. Once again, the medical profession is in a defensive position. If we don't oppose these unreasonable laws, further inappropriate ones will certainly follow. Wouldn't it have been reasonable for the Senate to allow everyone to read and digest the CDC guidelines before passing unnecessary and ill-conceived legislation? In this instance the SCMA immediately began developing a plan to provide confidential testing for physicians which would comply with the CDC guidelines. Details will be released when the plan is completed and approved.

In June, HCFA issued its guidelines for Medicare physician payment reform that included a 16 percent cut in physician reimbursement. What choice did physicians have but to rise up in opposition? The AMA headed a massive grass roots campaign to get RBRVS back to a budget-neutral position. HCFA had passed the rules, and physicians responded by asking Congress to override HCFA. The same scenario has been repeated frequently during the past decade. Remember when MAAC's were approved by Congress without any announcement or opportunity for public comment? Physicians lost that battle, even though the AMA fought it all the way to federal court.

At the state level, the SCMA has had to fight bills for mandatory Medicare assignment, triplicate prescriptions, direct access for physical therapists and other bills that would interfere with the appropriate practice of medicine. Should we simply allow these bills to pass and thus avoid a "negative" or "reactive" image? Of course not. We have an obligation to our patients and to our profession to maintain the highest standards for medical care and for the practice of medicine.

Medicine frequently finds itself in a defensive position because *we don't make the rules.* Congress, state legislatures, HCFA, the PRO, and insurance companies make the rules and regulations. Unfortunately we sometimes have very little input. Even when we can influence them, we don't have the final say.

Last year the AMA mounted a major campaign for Health Access America. It was a pro-active response to the criticism about uninsured Americans and the high cost of care. The debate on our healthcare system will continue, and the AMA has presented major points which must be addressed in any new system.

Medicine will continue to encounter situations that place us in a defensive position, when we must oppose or react to some issue. Our challenge is to respond in a positive manner. Health Access America, Health Care 2000, the SCMA Risk Management Committee and the SCMA HIV testing plan are all pro-active responses made by organized medicine.

However, pro-activism should involve individual physicians as well as organized medicine. As Walt Roberts pointed out in the President's Page in June 1986, physicians are encouraged to participate in politics, government, cultural and social endeavors, and community affairs. If physicians as a group were more pro-active, perhaps we could exert more influence on the "rule-makers." Yes, pro-activism is an important characteristic of the good physician.

J Chris Hawk III MD

J. CHRIS HAWK, III, M.D.
President

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CURRENT STATUS OF UROLOGIC CANCER AND ITS MANAGEMENT IN SOUTH CAROLINA

NABIL K. BISSADA, M.D.*

The incidence and mortality of urologic cancer, particularly that of the prostate and bladder, are rising in South Carolina as well as in the United States. Prostatic carcinoma is now the most common cancer in American men. It is estimated that in 1991 there will be 122,000 and 1,800 new cases of prostatic carcinoma in the United States and in South Carolina respectively.[1] In the same year, 32,000 and 450 men will die of prostatic carcinoma in the United States and South Carolina, respectively.

At the Medical University of South Carolina affiliated institutions, prostatic carcinoma is the most common urologic malignancy.[2] Anatomical radical prostatectomy is currently the modality of choice for treating most patients with localized adenocarcinoma of the prostate.[3] Radiation therapy also offers the potential for curing patients with localized prostatic carcinoma. It is also valuable as an adjunct to surgery in carefully selected patients and for temporary palliation in patients with advanced disease, especially those with hormone unresponsive cancers.[2]

Hormonal manipulation remains the initial treatment of choice for patients with advanced prostatic adenocarcinoma. Total androgen ablation seems to be slightly superior to conventional hormonal therapy.[4]

Bladder cancer is the second most common urologic malignancy in the United States and in South Carolina. It is estimated that 50,200 new cases of bladder cancer will be diagnosed and 9,500 patients will die of bladder cancer in the United States in 1991. Superficial bladder tumors are usually managed conservatively by transurethral resection. Adjunct intravesical chemo- or immunotherapy has been utilized selectively in many patients. The use of intravesical BCG for superficial bladder tumors has just been approved by the FDA. Other immunological agents are being actively explored for this purpose. Surgical treatment, including radical cystoprostatectomy with extensive pelvic node dissection, is the treatment of choice for suitable patients with deeply invasive non-metastatic carcinoma of the bladder.[5-8] Our experience with a technique of continent urinary diversion developed in South Carolina (The Charleston Pouch) in these patients has been extremely satisfactory, and has allowed a better quality of life as well as maintaining better renal function compared to standard urinary diversion.[9]

The use of multi-drug systemic chemotherapy continues to offer a therapeutic option for patients with advanced urothelial malignancy. However, early optimism of its overall value was tempered by long-term follow up results. Original data indicated 36 percent complete response rates with chemotherapy alone or with the addition of surgical resection of residual disease. Two-thirds of the complete responders however, relapsed before two years.[10]

---

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While testicular malignancy is uncommon, it usually affects young men in the most productive years of their life. In 1991, 6,100 new cases of testicular tumor will be diagnosed in the United States. Patients with testicular and paratesticular tumors seem to do fairly well with multi-modality therapy (surgery, chemotherapy, radiation therapy), with choice and sequence of therapeutic modalities determined by tumor histology, stage and volume of disease.[11-14] New effective chemotherapeutic agents continue to be introduced.[15-16]

Localized (non-metastatic) renal adenocarcinoma is still managed mainly by complete surgical extirpation.[17-24] Our experience with more than 80 renal conserving operations (partial nephrectomies) for the management of appropriately localized tumors or in those involving solitary functioning kidney or bilateral disease, has been very encouraging.[25] Extensive research is now directed at finding effective systemic therapy for patients with advanced renal cell carcinoma.[26]

Surgical management remains the most effective treatment for patients with urethral and penile cancer.[27-30] Extent of surgical resection should be tailored to stage and volume of disease.[31] Radiation therapy offers an alternative in patients with small lesions involving the glans penis but does not seem to be suitable for more advanced carcinoma extending to the shaft or to post circumcision carcinomas.[28] Penile reconstruction is now available to most patients who require penectomy for cancer control.[29]

Although adrenal tumors are being detected with increasing frequency most of these are small non-functional adenomas (adrenal incidentalomas). Small (less than 3cm) non-functional masses are best managed expectantly by observation and repeated imaging. Those 5cm or larger should be managed surgically. Masses 3-5cm should be individualized. Functioning adrenal tumors are among the most interesting areas in clinical medicine. Our interest in adrenal pathology extended over many years.[32-43] This included pheochromocytomas, functioning and nonfunctioning adrenocortical tumors, neuroblastomas, congenital adrenogenital syndromes and a variety of other adrenal masses. Patients with congenital and other benign adrenal lesions, including pheochromocytomas, have done quite well with appropriate surgical and medical management. Those with adrenal cancer have a moderately reasonable prognosis when completely resectable. Unfortunately, over half of the patients with adrenal cancer have advanced disease at the time of diagnosis and their survival is still very poor.

CONCLUSION

Substantial progress has been achieved in the detection and management of urological cancer. Yet, the incidence and mortality in South Carolina as well as in the country are increasing. The continued need for research to develop better preventive and therapeutic measures is obvious. Identifying the problems and the currently available screening, diagnostic, and therapeutic measures is the basis for plans to prevent and/or improve detection and management. ☐

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AIR FORCE

IMMEDIATE BREAST RECONSTRUCTION*

RICHARD C. HAGERTY, M.D.**
WARREN L. GOULD, M.D.

Breast cancer continues to be the most common female malignancy. Its incidence is rising and it is currently estimated that one woman in ten will eventually face this cancer. Until recently, the disfigurement and disability from treatment were feared as much as the cancer itself. However, with the advent of new breast reconstruction techniques, the psychological cost can be dramatically reduced. Initially excellent results were obtained with delayed reconstruction performed several months after the initial mastectomy procedure. Today the concept has been extended to offer reconstruction to patients at the time of their initial mastectomy.

There are many advantages to immediate breast reconstruction. Psychological studies have strongly supported the advantages of immediate breast reconstruction.[1, 2, 3] For psychological recovery, "the sooner the better." Many patients can totally avoid post-mastectomy depression. On the practical side, there may be fewer surgical procedures and hospitalizations since the original mastectomy is combined with the first stage of breast reconstruction. This reduces the length of disability and lowers costs for both the patient and the insurance carrier.

Removal of the cancer is foremost. All other considerations should be secondary. It is well established that immediate breast reconstruction can be accomplished without altering the long-term survival of the patient.[4]

Advocates of delayed breast reconstruction point to several theoretical advantages.[5, 6] The reconstructed breast is rarely as good as the breast that was lost. Therefore, the patient can "live with her deformity" and better appreciate the reconstruction later. Adjuvant therapy can be completed and the stage of disease can be defined. Early experience with immediate breast reconstruction suggested an increase in complication rates. Removing this objection with increased familiarity of the technique, the complication rate has been no greater than with delayed breast reconstruction. Likewise, in the early experience the results from immediate breast reconstruction were not as aesthetically pleasing as those from delayed reconstruction. Now, through careful planning and close coordination with the General Surgeon, immediate reconstruction results are as good if not actually superior to those obtained with delayed breast reconstruction. Vinton et al. have recently shown immediate breast reconstruction following mastectomy is as safe as the mastectomy alone.[7] Patient disappointment is still a potential problem. This may result from either unrealistic expectations on the part of the patient or due to poor patient education by the surgeon. Despite time constraints and the emphasis to operate early it is important to fully explain the various reconstructive options to the patient so that she may make an informed decision regarding her care.

Indications for immediate breast reconstruction have greatly expanded. Formerly the procedure was limited to patients with various small cancers and with a small opposite breast. Experience with this group and the finding that the breast reconstruction does not delay the onset of adjuvant therapy (either radiotherapy or chemotherapy) have led to the extension of immediate breast reconstruction to the majority of individuals requiring mastectomy.

There must, of course, be strong psychological motivation for breast reconstruction. There is a subset of women who desire no reconstruction whatsoever. On the other hand immediate reconstruction may be of critical importance for a patient who would insist on keeping the diseased breast rather than go through the psychological trauma of mastectomy.

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The oncological surgeon can make the reconstruction easier in a number of ways. Preservation of the pectoral nerves will avoid atrophy of the pectoralis muscles. The more local tissue available for reconstruction, the better the long term results will be. The more skin that is left on the chest wall the better, as this would allow tension-free closure and more satisfactory coverage. A diagonal incision is superior both because it can be more easily hidden by clothes and because it can be extended into the axilla, giving excellent exposure for axillary dissection. Preservation of the inframammary crease makes the reconstruction much easier and the long term results more satisfying (Illust. #1).

There are many different ways that immediate breast reconstruction can be accomplished.[8, 9, 10, 11] A submuscular implant can be placed with immediate closure similar to an augmentation mammaplasty for cosmetic reasons. This is ideal for the small-breasted patient. If a significant amount of skin has been resected with the mastectomy, the remaining skin may be stretched and placed under tension (Illust. #2, Case #1). In some of these cases a tissue expander which is not inflated can be placed under the skin and muscle. After several weeks, the expander is inflated by a percutaneous injection of saline. This results in stretching and expansion of the overlying skin. The tissue expander can later be removed and replaced with a permanent implant. There are also tissue expanders which may be left in permanently, eliminating the extra expense of changing to permanent implants. If extra skin and autogenous tissue must be used, there are a variety of muscle flaps available. The latissimus dorsi muscle flap (Illust. #3) and the T.R.A.M. flap (Illust. #4) have been used for immediate reconstruction. The T.R.A.M. flap uses the skin and soft tissue which is normally discarded following an abdominoplasty (Case #2). With the T.R.A.M. flap a breast can frequently be reconstructed without the use of implants. It is the best choice when there is significant ptosis of the opposite breast. The latissimus dorsi flap from the back is also useful for providing extra skin and muscle coverage. It does, however, require the placement of an implant or a tissue expander as well. A new development has been the use of free tissue transfers for immediate breast reconstruction (Illust. #5). This is usually done with the gluteus free flap. This takes excess tissue from the buttocks supplied by the inferior gluteal artery which is then connected using a microvascular anastomosis to the thoraco dorsal pedicle in the axilla.[12] The T.R.A.M. flap has also been used as a free flap in immediate reconstruction.[13, 14]

OUR EXPERIENCE

We have done over 36 immediate breast reconstructions for total mastectomies, and over 16 immediate reconstructions for modified radical mastectomies in the last six years. We had one hematoma, three flaps that needed to be revised, two implants changed and one loss of the implant due to excessive painful scarring around the implant. We also lost a tissue expander that became secondarily infected by staph almost a month after surgery.

Over the last year we have done over 10 T.R.A.M. flap reconstructions and one free T.R.A.M. flap for immediate breast reconstruction. There has been one partial loss of a T.R.A.M. flap but no hernia formation.

DISCUSSION

Most series show about a 20 percent complication rate with submuscular implants alone.[13-18] In all series, the point is repeatedly made that the more experience the teams have with these procedures, the less the rate of complications. Tissue expansion has the advantage that there is no immediate pressure on the suture line. The complication rate is much less. It is also felt the aesthetic results are better because the expanded skin can better accommodate an implant. In 1985, Georgiade showed that there was no decrease in survivability in patients who had undergone immediate reconstruction versus delayed reconstruction.[4] Results have shown that immediate reconstruction does not interfere with adjuvant therapy, including radiation therapy. Reconstruction of the mastectomy defect with a T.R.A.M. flap offers the best aesthetic results. However, the operation is more technically demanding, and there are more potential complications including hernia formation. This has become less of a problem as we have learned to stay above the arcuate line. In the past four years, we have had no abdominal wall problems that we are aware of in any of our cases. This includes an experience with over 50 T.R.A.M. flaps.

A qualified Plastic Surgeon with experience in breast reconstruction may not be available locally to every General Surgeon. In such cases, we feel strongly that the primary doctor/patient relationship should take precedence and we recommend that the mastectomy be done locally with delayed breast reconstruction by the Plastic Surgeon. When possible, the Plastic Surgeon should see the patient preoperatively to assist in formulating the treatment plan. This staged approach is preferable to sending the patient to another city to have a one-stage procedure by a surgical team with whom she hasn't established a relationship.

CONCLUSION

Immediate breast reconstruction has been one of the most satisfying developments in Plastic and Reconstructive Surgery in the last ten years. Complication rates, initially higher, are now no higher than those from the mastectomy or with delayed reconstruction. Adjuvant therapy is not compromised. Local recurrence of the breast cancer (which usually occurs in the scars superficial to any reconstruction) is generally easily detectible and long term survival is not negatively influenced by breast reconstruction. There may be reduced costs and reduced patient discomfort by combining the first stage of the breast reconstruction with the mastectomy. Patient satisfaction is high as long as the patient has realistic expectations and is knowledgeable about the procedure. Immediate breast reconstruction is an important addition to our treatment options and should be included in the discussion of treatment options with every patient facing breast cancer. □

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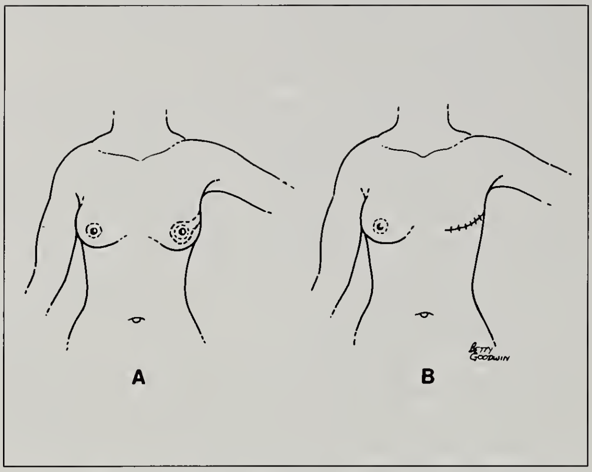
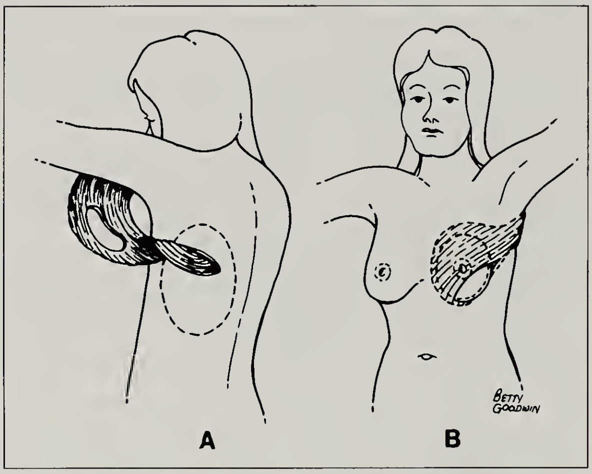
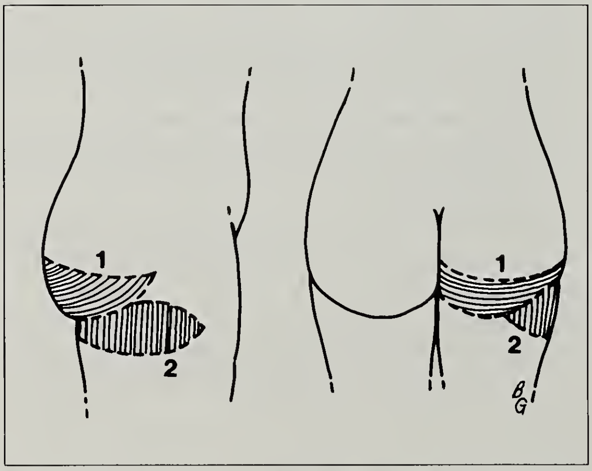
ILLUSTRATIONS



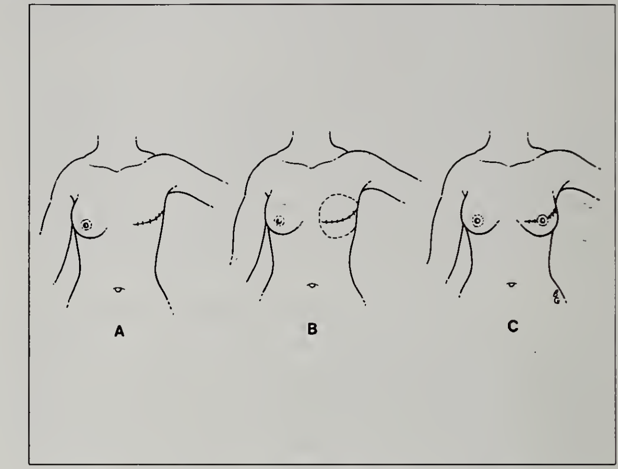
1. Incision from the mastectomy is diagonal and the inframammary crease is preserved.



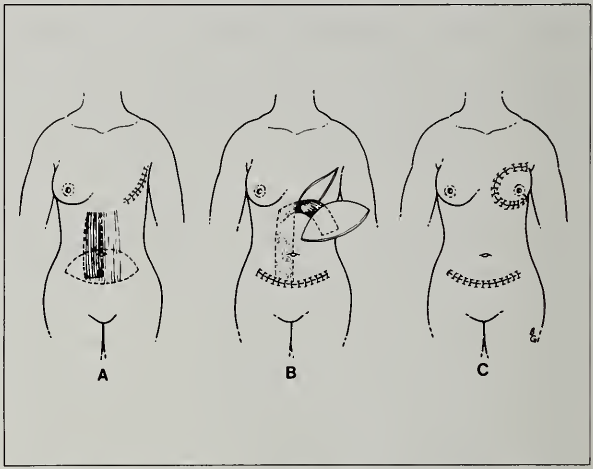
3. (A) Latissimus muscle and overlying skin are rotated from patient's back. (B) Latissimus muscle is inserted in mastectomy defect covering permanent prosthesis.



5. Alternative donor sites for free flaps include gluteal area of buttocks (1) or saddlebag area of thigh (2).

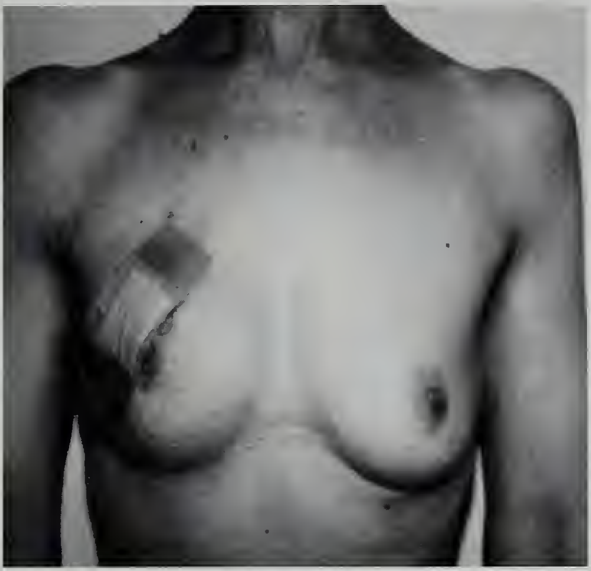


2. Illustration (A)—Patient after mastectomy with diagonal scar on chest. Illustration (B)—Permanent prosthesis or tissue expander later replaced by permanent prosthesis is inserted in submuscular plane to reconstruct mound of breast. Illustration (C)— Nipple areola reconstruction is completed.

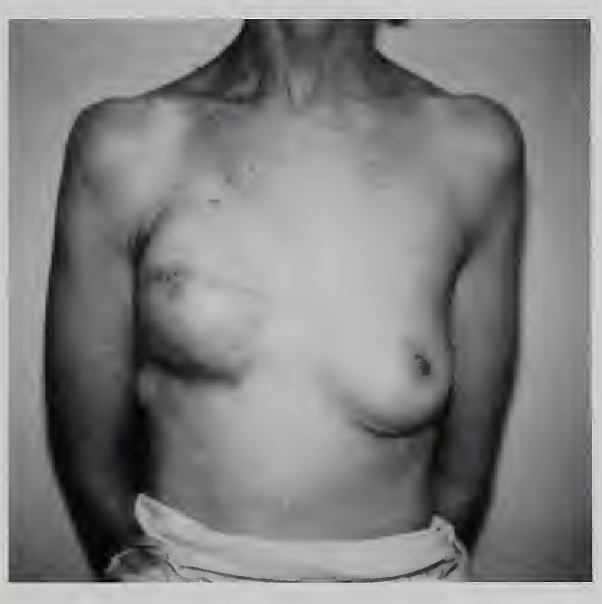


4. (A) TRAM flap is outlined on abdominal based on perforated superior epigastric pedicle under rectus muscle. (B) Abdominal flap has been turned into mastectomy defect. (C) Flap has shaped into a breast mound, followed later by nipple areola reconstruction.

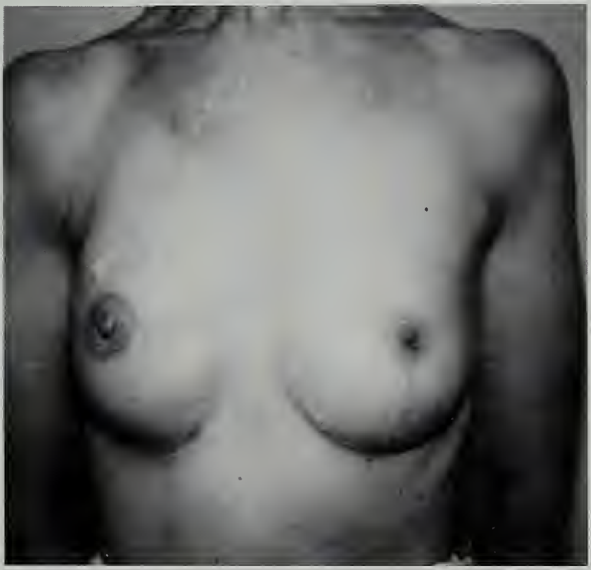
CASES



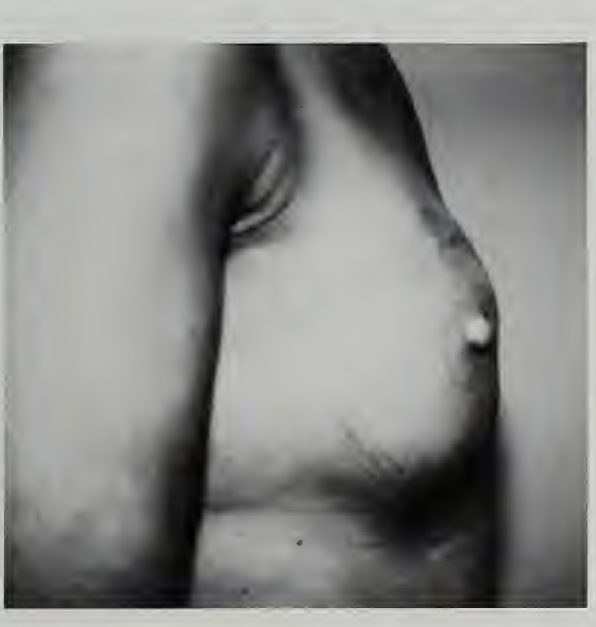
Case #1 (A) 48-year-old white female with status post biopsy of breast showing intraductal carcinoma.



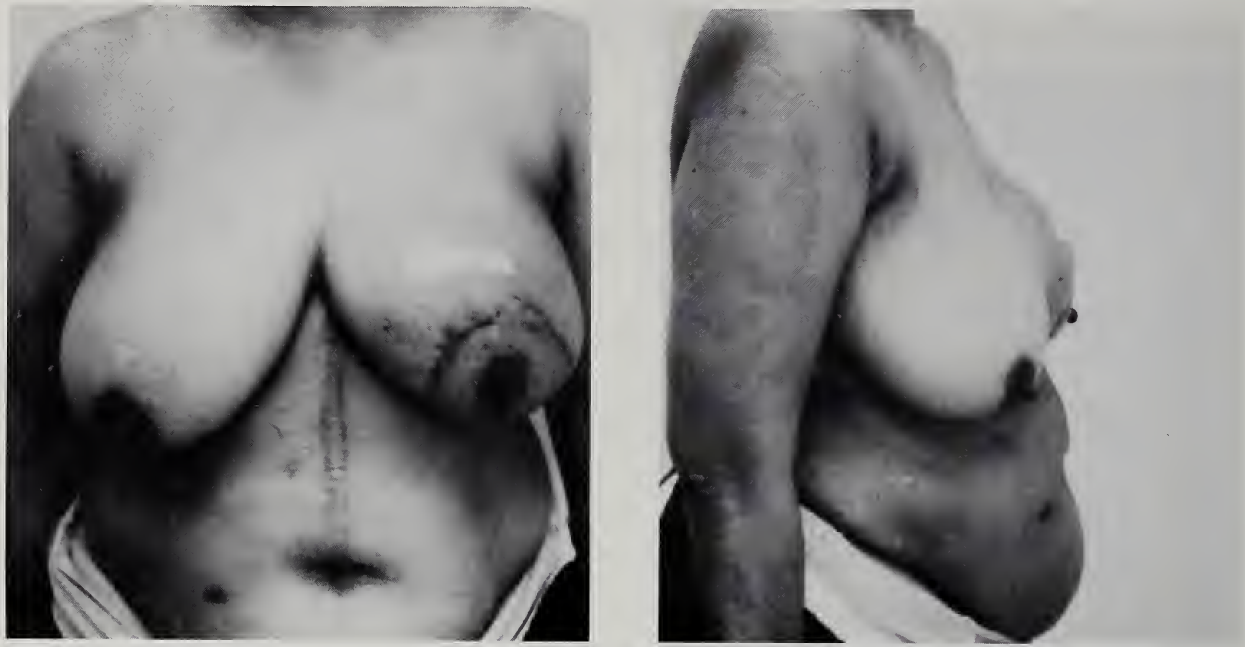
Case #1 (B) Skin expander placed underneath the tissue.



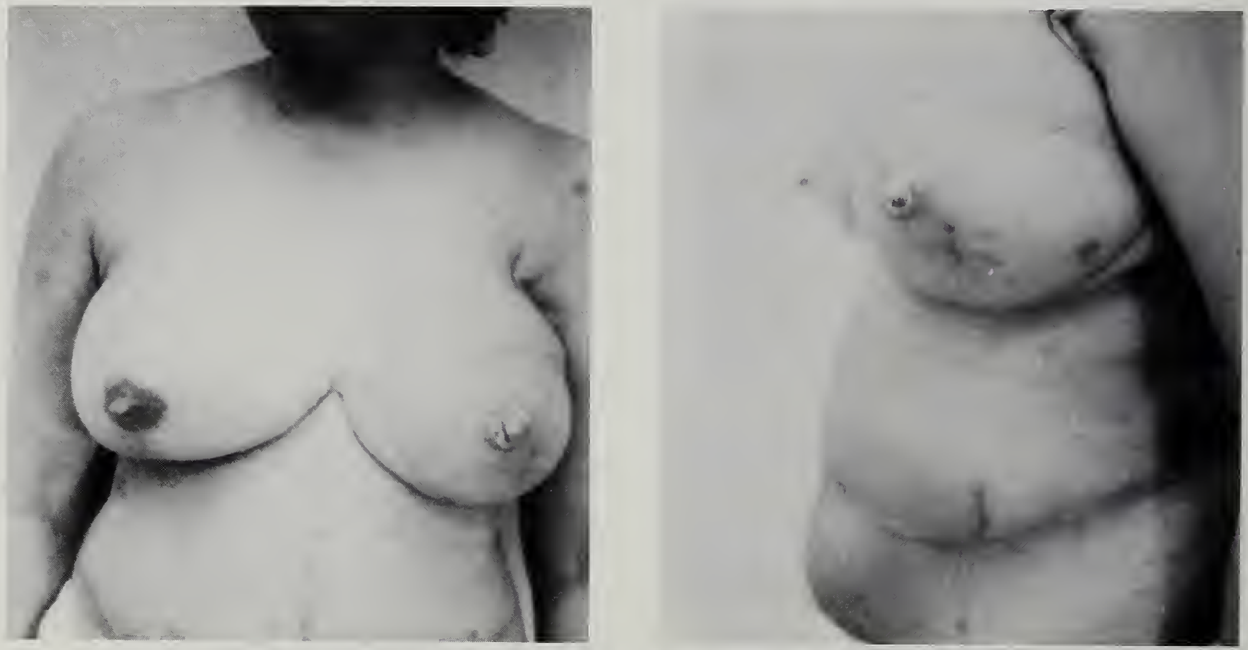
Case #1 (C) Tissue expander removed and permanent prosthesis in place—PA view.



Case #1 (D) Lateral view of same patient.



Case #2 A 60-year-old black female on AP view has large breasts with excess abdominal tissue (A) and lateral (B) view.



Case #2 Status post reconstruction of breast with TRAM flap, AP. (C) and (D) lateral view.

SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION
Joy Drennen, Editor *Contributions welcomed*
798-6207, in Columbia *1-800-327-1021, outside Columbia*

September 1991

MEDICARE UPDATE

UPIN

Effective September 1, 1991, physicians are required to report the referring or ordering physician's UPIN (unique provider identifying number) on the HCFA 1500 claim form. Effective with services on or after January 1, 1992, claims without this information will be denied. See the special August, 1991 Medicare Advisory from BC/BS for further information, as well as the regular August, 1991 Advisory, pages 13-14.

Correct Patient Address

Now that physician offices are required to submit all Medicare claims, the carrier has noticed an increase in problems in mailing checks to beneficiaries because of incorrect patient addresses. Please ask your office to double check the home addresses of your Medicare patients and include the complete, accurate address on the claim form.

Physician Payment Reform

In response to the concerns of medicine which received very positive support of Congress, HCFA has announced that it will revise its proposal which planned to attain a 16 percent reduction in Medicare payments to physicians through implementation of the RBRVS. At the time of this newsletter printing, further details were unavailable, hence the AMA and SCMA were withholding judgment.

Disclosure Forms on Ownership/Self-Referral

As part of OBRA 1989, Congress required that the entity billing Medicare must provide information to the federal government on physicians with investment interests in the entity as well as physicians who are immediate relatives of people with investment interest.

If you have billed Medicare for clinical laboratory services, you will receive a financial disclosure form requesting this type of information. Any clinical lab or physician who has billed Medicare for clinical lab services will be mailed a disclosure form with a deadline of October 1. ***Although the AMA has protested the mailing of these forms without the issuance of the required regulations, you are advised that it is of utmost importance that you complete the form and return it on time. There are significant ($10,000) monetary penalties per day for not returning the form.*** You are advised to return the form via certified mail, return receipt requested.

Effective January 1, 1992, Congress has prohibited referrals of Medicare patients to clinical laboratories with which a referring physician has a financial relationship; exceptions to the prohibition include in-office labs, group practice labs, investments in a corporation listed on a major stock exchange with total assets excluding $100 million, and rural labs. The federal government has also issued other guidance on "self-referral," including the recent "safe harbors." Further information on safe

(MEDICARE UPDATE CONTINUED)

harbors was included in last month's newsletter.

You must complete the disclosure form if you bill any Medicare lab service.

You may obtain additional information about the federal rules pertaining to physician ownership/self-referral from the SCMA (Barbara Whittaker or Steve Williams). You are advised to contact your attorney if you have any specific questions about your financial involvement in healthcare entities to which you refer.

Workshops

Medicare is sponsoring a series of workshops for Physician Payment Reform during September. These workshops will cover the upcoming RBRVS, related coding changes, the new HCFA-1500 claim form and other issues affecting Medicare providers. The registration fee is $10.00. Call your provider service center to insure you can still register, as seating is limited.

Workshop Locations and Times

Friday, 9/20, 9:00-12:30, Quality Inn NE, I-20 at Two Notch Road, Columbia, SC

Monday, 9/23, 1:00-4:30, Holiday Inn West, Hwy 501, Myrtle Beach, SC

Tuesday, 9/24, 9:00-12:30, Francis Marion College, Highway 301, Florence, SC

Clarification of August Medicare Advisory

You should have received the August, 1991 Physician Payment Reform Update. Pages 8-13 show column I codes as "correct" codes and column II codes as "incorrect" codes. **All** codes are valid or correct codes in both columns. However, the codes listed in column II will not be paid **if** they are billed with the codes listed in Column I. Billed separately they would still be paid if they are appropriate. ❐

MEDICAID UPDATE

By this time you should have received two Medicaid Bulletins which advise you of the reductions in the Medicaid program due to a shortfall in the state's budget. Contrary to what you may have read in the newspaper, the Finance Commission will continue to pay for three prescriptions at this time. There will only be three (3) reimbursable hospital visits per adult patient and the number of allowed home health visits has been reduced.

The number of physicians' visits for adults has been reduced from 18 to 12. The rates of reimbursement for certain procedures has been reduced; however, the Finance Commission has, for the most part, protected primary care payments.

The SCMA continues to request that you care for your fair share of Medicaid patients. Be sure to remind your state legislators when you have an opportunity of the importance of adequately funding the Medicaid budget so that the poorest South Carolinians are able to receive necessary health care services. ❐

IMPORTANT NOTICE FROM THE OFFICE OF LEGAL AFFAIRS

Please note an error in last month's article about the new infectious waste regulations.

There is a $25 fee to register as a small quantity generator.

As previously reported there is no fee required for a small quantity generator to transport their own waste to a disposal site. ❐

RED RIBBON CAMPAIGN

"Neighbors Drug Free & Proud" is the theme of this year's National Red Ribbon Campaign, October 19-27. The purpose of the campaign is to create an awareness of drug and alcohol abuse among youth and to form coalitions to implement substance abuse prevention programs. The kick-off for the campaign will be 12:00 pm Friday, October 18 at the State Fairgrounds in Columbia.

The SCMA will display a campaign banner all week in the front lawn which will be highly visible from I-26. We have also had brochures mailed to all county auxiliary presidents with ideas for promoting the campaign in their area. Dr. Ben Stands of Columbia has written a letter to the editor in this issue of *The Journal*, encouraging physicians to do their part in combatting substance abuse. You can show your support by wearing a red ribbon and putting a red ribbon on your door. You can receive a brochure containing items that may be purchased, including ribbons, banners and buttons, by calling the Red Ribbon Headquarters in Columbia at 235-4099.

In addition to SCMA participation in the Red Ribbon Campaign, we will continue the SCMA-SCBA program which provides doctor/lawyer teams to speak to middle school students about the medical and legal consequences of substance abuse. *Any physicians interested in participating in this program may contact Joyce Jenkins at the SCMA office.* ❒

ENVIRONMENTAL NOTES

The SCMA Environmental and Protection Committee offers the following ideas to make your home and office more environmentally responsible:

- Use recycled fax paper. Standard fax paper is not recyclable because the chemicals used in its manufacturing process contaminate the paper for recycling purposes.

- Avoid making photocopies of a fax message. This doubles the amount of paper consumed.

- Use small cover sheets for your fax messages, or better yet, use the new stick-on type fax covers that can be attached to the first sheet of your message.

- Try to use environmentally safe cleaners with a borax or baking soda base instead of cleaners made from more environmentally hazardous substances. If possible, avoid using a separate cleaner for each job, such as a tile cleaner, a glass cleaner and a floor cleaner. Look for one cleaner that serves all three purposes.

- Set up a recycling station for all aluminum cans.

- Use paper cups and plates instead of styrofoam.

- Try using the new recycled paper products for your office stationery. ❒

CAPSULES

James Haskell Brown, MD, has been honored by Furman University with a special award during the university's commencement exercises. Dr. Brown, who practices internal medical in Greenville, received the Algernon Sydney Sullivan Award in appreciation of his humanitarian qualities.

Charles G. Sasser, MD, from Conway, was recently appointed to the Board of Directors of the Academy of Hospice Physicians. The Academy, of which Dr. Sasser is a founding member, is an international organization of physicians dedicated to the advancement of hospice medicine for palliative care and management of the terminally ill. ❒

NEW COLLECTION PROGRAMS

I. C. System has just introduced two new products: **Rapid Recovery and Recovery Plus Collection Services.** The company is also continuing to offer its original program, now titled Premier Collect Collection Service.

Rapid Recovery utilizes a series of letters to prompt debtors to make their payments. I. C. System sends your debtors four collection letters. A collection letter from an independent attorney is included in the service. Debtors pay you directly, and you don't owe any collection commission.

Recovery Plus includes all the services of Rapid Recovery, plus, if a debt is not collected using these efforts, more intensive collection efforts.

Premier Collect uses collection efforts that include letters, a demand letter from an independent attorney, telephone calls from professional collectors, list of debts with national credit reporting agencies, limited skip-tracing and an optional litigation referral service. With Premier Collect, you are guaranteed that I. C. System will collect at least 10 times the amount of your service enrollment fee.

For more information on I. C. System's expanded services, call (800) 325-6884. ❐

PUBLICATIONS AVAILABLE

You may want to take advantage of brochures developed by the AMA's Consumer Affairs department to educate patients about fat/cholesterol and women's health topics.

Materials are produced as part of two consumer health campaigns: the Fat/Cholesterol Education Program (formerly called the Campaign Against Cholesterol) and the Women's Health Campaign. They are available to physician offices, clinics and hospitals.

These consumer health campaigns are funded by corporate sponsors, thus the materials are free.

For more information call AMA Consumer Affairs at 1-312-464-4444.

The SC Commission on Aging and the SC Department of Highways and Public Transportation have produced a booklet entitled "Mature Driving," which contains tips and cautions for older drivers.

To obtain copies for your office, contact the SC Commission on Aging, 400 Arbor Lake Drive, Suite B-500, Columbia 29223, 735-0210 in Columbia. ❐

UPCOMING MEETINGS

The AMA Department of Practice Management has scheduled a "Gearing Up for Retirement" workshop in several locations this fall. On November 10, 1991, such a workshop is planned for Asheville, NC. Registration is $275 for AMA members and $345 for non-members.

For further information, call AMA Registrar, 1-800-366-6968.

The Sixth Annual AIDS/HIV Conference, sponsored by the Palmetto AIDS Life Support Services, will be held November 7-8, 1991 at the State Museum in Columbia. Titled "New Dimensions: Professional and Personal," the focus of this conference is on the clinical management of the HIV patient in an outpatient setting.

For further information and to register, contact Donna Rae Palma, Conference Chair, in Columbia at 779-7257 or 1-800-868-7257. ❐

SOUTH CAROLINA OBSTETRICIANS' INITIATION AND EXPECTATIONS OF GENETIC COUNSELING REFERRAL*

KATHLEEN E. JOHNSON, M.S.**
JANICE G. EDWARDS, M.S.
KAREN A. BROOKS, M.S.
EDGAR O. HORGER, III, M.D.

Genetic counseling has evolved as a "colleague-dependent" service.[1] Genetic centers are dependent on the referral of at-risk patients by primary care physicians, most often obstetricians.[2] These obstetricians fulfill a vital role in the provision of genetic services, as they are most often responsible for what has been called "preliminary genetic counseling."[3]

> "Preliminary genetic counseling" refers to both the evaluation and the initial discussions with the family or patient. . . . "Definitive genetic counseling" refers to the formal session with the family in which the conclusions and the information they are based on are explained in detail, questions are answered, arrangements made for follow-up, and a written record of the diagnostic measures and conclusion provided to the family.[3]

Because three-quarters of preliminary genetic counseling is provided by non-geneticist primary care physicians, these physicians are "critical to the initiation and direction of the genetic counseling effort."[3]

The frequencies with which obstetricians seek genetic counseling for their patients and the expectations of the obstetrician of such counseling are uncertain. A study was designed to assess both initiation and expectations of genetic counseling referral. We explored how obstetricians identify patients at genetic risk and how the options of genetic counseling and prenatal diagnosis are presented to these patients. Because the process of genetic counseling can reveal additional genetic risks, genetic counselors can be faced with issues which go beyond the initial reason that prompted the physician to make the referral.[4,5] In these instances, additional discussion or testing may be warranted; we also explored obstetricians' expectations in such situations. The primary goal of the study was to improve understanding of these issues so that the coordination and quality of genetic services offered in South Carolina could be improved for the prenatal care provider, the genetic center and the patient.

METHODS

A one-page questionnaire was prepared to assess the methods of identifying patients at genetic risk, the presentation of the option of genetic counseling and/or prenatal diagnosis referral, and the expectations of the genetic center's role in such a referral. In addition, we requested that each participant return a copy of the genetic screening tool if one was used in his/her practice.

A total of 296 surveys were mailed during January 1991 to the obstetrician members of the South Carolina Medical Association. South Carolina was divided into three regions corresponding with the areas served by South Carolina's three genetic centers: the Piedmont region, served by Greenwood Genetic Center in Greenwood; the Midlands region, served by the University of South Carolina Department of Obstetrics and Gynecology, Division of Genetics in Columbia; and the Coastal region, served by Medical University of South Carolina, The Genetics-Birth Defects Center in Charleston. The questionnaire mailed to

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**From the Department of Obstetrics and Gynecology, University of South Carolina School of Medicine, Two Richland Medical Park, Suite 208, Columbia, S.C. 29203.

**Address correspondence to Ms. Johnson at Baylor College of Medicine, 6550 Fannin #921, Houston, TX 77030.

each prospective participant was marked with his/her specific region.

From each obstetrician's response the following demographic information was collected: region, sex, age, year of medical school graduation, type of practice (group/solo), size of practice, and number of genetic counseling referrals made in the last year. All calculations and statistical analyses were performed by the SAS computer program.

RESULTS

Questionnaires were returned by 143 (48.3%) obstetricians; 12 of these surveys were excluded as those respondents were not currently providing prenatal care. Respondents were included in the study if they omitted a question; missing answers were not used in the statistical analysis. The remaining study cohort consisted of 131 returned questionnaires.

Responding obstetricians were predominantly male (87.0%; 114/131). The majority (77.9%; 102/131) indicated that they were part of a group practice, 21.4% (28/131) were in solo practice, and 0.8% (1/131) did not specify. Physicians were asked to estimate the number of referrals made for genetic counseling in the last year, and from that number and the size of their practices, referral rates were calculated. The average referral rate was 8.19% of the practice size (SD=4.68). The remaining demographic data are summarized in Table I.

The majority of obstetricians (60.8%; 79/130) indicated that they wanted a woman to begin prenatal care as soon as she knew she was pregnant; 23.8% (31/130) indicated between four to six weeks gestation, and 15.4% (20/130) indicated between eight to 12 weeks gestation. Eighty-seven percent (114/131) of respondents indicated use of a verbal history to ascertain patients at genetic risk while 57.3% (75/131) also used written screening tools, and 6.9% (9/131) specified other means. Respondents indicated all of the factors which they routinely evaluated when making a genetic risk assessment; the frequency with which each factor was evaluated is listed in Table II.

Forty-two responding obstetricians (32.1%) provided a copy of their written genetic screening tool. Table III summarizes the types of screens returned. The most significant genetic risk factors were addressed by the majority of the screening tools with the following exceptions: Asian ethnic background was covered on only 17 of 29 genetic screens (58.6%); family history of pregnancy losses on six of 29 (20.7%); and consanguinity was not assessed on any returned genetic screening tool.

A series of questions was designed to determine whether genetic counseling and/or prenatal diagnosis were discussed with prenatal patients at genetic risk, and whether or not

TABLE I

OBSTETRICIAN DEMOGRAPHIC INFORMATION

	N	*Mean*	*SD*	*Median*	*Mode*	*Minimum*	*Maximum*
Age (years)	125	43.3	7.7	43	36	30	65
Year of med school graduation	128	1973	8.2	1975	1977	1951	1986
Size of Solo practice *(deliveries/yr)*	25	221.1	131.4	180	300	100	700
Size of Group practice *(deliveries/yr)*	101	564.5	427.6	480	400	80	3800
Referral rate *(percent of practice size)*	104	8.19%	4.68%	8.0%	8.33%	0.53%	25.0%

TABLE II

EVALUATION OF SPECIFIC GENETIC RISK FACTORS

	Respondents who evaluate the factor: Obstetricians	
Risk factor:	*N*	*(%)*
Maternal age	128	(100)
Family history of birth defects	128	(100)
Family history of genetic disorder	127	(99.2)
Multiple spontaneous abortions	125	(97.7)
Medications during pregnancy	123	(96.1)
Family history of mental retardation	121	(95.3)
Ethnic background	110	(85.9)
Exposure to infectious diseases during pregnancy	109	(85.2)
Family history of pregnancy losses	102	(80.3)
Chemical, work related exposure	90	(70.9)
Heterozygote screening results, if applicable	79	(61.7)
Consanguinity	49	(38.3)

the physician was directive in this discussion. The majority of obstetricians (90.9%; 110/121) discussed genetic counseling as an option and took the time to describe the amniocentesis and CVS procedures (97.6%; 120/123). The majority of respondents (81.1%; 90/111) also recommended prenatal testing to their patients at risk and approximately one-third recommended one test, CVS or amniocentesis, over the other (35.5%; 39/110).

TABLE III

OBSTETRICIANS' SCREENING TOOLS

Obstetric risk checklists			13	(31.0%)
Genetic screens			29	(69.0%)
ACOG*	22	(75.9%)		
Other	7	(24.1%)		
			42	(100.0%)

*Prenatal genetic screen published by American College of Obstetricians and Gynecologists (ACOG)[6]

Of those obstetricians who recommended one prenatal test over the other (n=39), 56.4% (22/39) recommended CVS, 28.2% (11/39) recommended amniocentesis, and 15.4% (6/39) indicated that their recommendation depended on the situation. The reason most often cited for recommending CVS was the early nature of the diagnosis. Amniocentesis was often recommended because of factors relating to the availability of the test: the physician could perform it him/herself, amniocentesis was available locally, and CVS was not available. Although not statistically significant, there was a trend toward obstetricians in the Piedmont region recommending amniocentesis (7/11) while physicians in the Midlands and Coastal regions more often recommended CVS (20/28).

A series of four questions assessed the respondents' expectation of situations in which the genetic counselor became aware of a genetic risk which the referring physician did not indicate as a reason for referral:

1. Ninety-nine percent (128/129) of obstetricians wanted the genetic counselor to address the teratogenic effects of any medications or street drugs to which a patient had been exposed.
2. When a woman referred for genetic counseling and CVS opted instead for amniocentesis, 60.3% (79/131) of respondents did not feel the need to be informed before the center rescheduled her appointment. However, 49 responding obstetricians (37.4%) wanted to

speak with the patient before she was scheduled for an amniocentesis, a common reason being that physicians wanted to perform the amniocentesis themselves. Obstetricians practicing in the Piedmont region were significantly more likely (p=0.000) to respond in this way than physicians in other regions.

3. The vast majority (91.5%; 119/130) of obstetricians felt that the genetic center need not obtain their permission before proceeding with heterozygote screening tests.
4. Similarly, 91.5 percent of physicians (119/130) felt that the genetic center should proceed with parental blood chromosome analysis if indicated, and notify them afterward in a timely manner.

Almost half of physicians (45.3%; 53/117) wanted to notify patients of normal prenatal testing results. Physicians in solo practice were significantly more likely (p=0.015) to want to do so than obstetricians in group practice. Fifty percent (60/120) also wanted to know of normal results before the patient. A majority of obstetricians (77.9%; 95/122) wanted the responsibility of notifying patients when testing revealed an abnormality and 91.7% (111/121) wanted to learn about an abnormality before the patient.

Three summarizing statements were provided representing varying expectations of genetic counseling referrals:

A. I expect the genetic counselor to address only the issue(s) for which I refer my patient,
B. I expect the genetic counselor to recognize possible additional risks, but I do not want them discussed with my patient until I have been informed,
C. I expect the genetic counselor to recognize possible additional risks, discuss them with my patient, and inform me afterward in a timely manner.

Ninety-four percent (122/130) of responding physicians selected statement C. One obstetrician (0.8%) selected statement A, five (3.8%) selected the intermediate statement B, and two physicians selected both B and C (1.5%). Chi square analysis was inappropriate due to the high frequency of respondents who selected the same statement; however, the analysis when physicians were divided by year of medical school graduation revealed an interesting trend in that 84.4% (38/45) of the 1960's graduates, 98.1% (51/52) of the 1970's graduates, and 100% (33/33) of the 1980's graduates selected statement C.

DISCUSSION

Physicians demonstrated adequate assessment of major genetic risk factors among their patients. Maternal age, multiple spontaneous abortions, family history of birth defects or mental retardation, and medications during pregnancy were routinely screened by over 95% of obstetricians. Consanguinity, ethnic background, results of heterozygote screening, exposure to infectious disease, and chemical or work-related exposures were covered less often. The referral rate of 8.19% of all obstetric patients is consistent with published rates,[7] further demonstrating appropriate screening by obstetricians. Furthermore, prenatal care was initiated early enough that at-risk patients could be identified and referred in time for both CVS and amniocentesis to be valid options.

The physician's role as educator was emphasized by the large proportion of obstetricians who described the prenatal diagnosis procedures and discussed the option of genetic counseling referral. Of particular interest was the fact that the majority of obstetricians recommended prenatal diagnosis and a large proportion preferentially recommended either CVS or amniocentesis to their patients at risk. These responses seemed to indicate a degree of directiveness among obstetricians in contrast to the principally nondirective approach of genetic counselors.

The availability of CVS in South Carolina proved to be an example of a community variable[8] influencing physicians' referral practices. Currently only the University of South Carolina and Medical University of South Carolina offer CVS in the state, so that patients in the Piedmont region must travel for CVS testing. Piedmont obstetricians who preferentially recommended one technique of prenatal diagnosis, recommended amniocentesis more often than their colleagues in other regions. Similarly, obstetricians in the Piedmont region were statistically more likely than physicians in other regions to want to speak with a patient opting for amniocentesis instead of CVS. Both of these findings may be a reflection of accessibility of CVS rather than a difference in attitude towards the procedure. The travel involved in obtaining a CVS may prompt physicians in the Piedmont region to recommend amniocentesis as well as to prefer that the patient who decides against CVS returns to their office/region for the amniocentesis procedure.

Respondents overwhelmingly expected the genetic center to recognize additional risks that a patient may have, and the vast majority of obstetricians felt that the genetic counselor should discuss unforeseen genetic issues and offer any additional indicated testing. Exceptions to this trend, however, emphasized the importance of defining with each physician the expectations of the referral relationship. When the referring physician is confident and satisfied with the service that the genetic center provides, and the genetic counselor understands what the physician expects, the patient receives optimal, coordinated care. ☐

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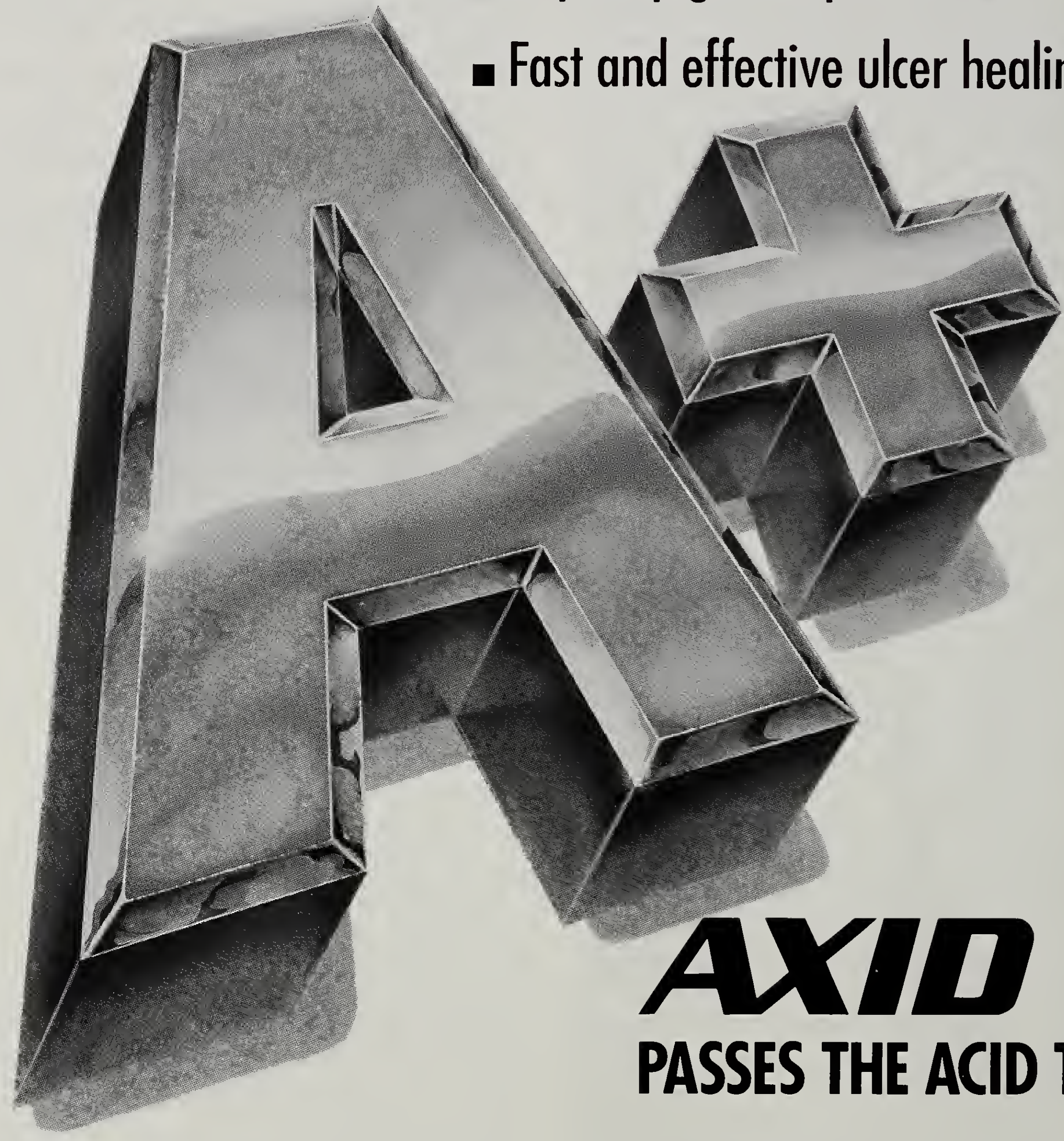

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Editorial

ROUND THREE: HIV AND PUBLIC POLICY VERSUS HEALTHCARE WORKERS AND PATIENTS

Or is it round four or five? I've lost count. And I'll forgive the reader who professes to be bored by the entire matter.

However, current debates about HIV-infected healthcare workers (HCWs) who perform exposure-prone procedures carry far-reaching consequences. These debates strike at the core of the trust implicit in good doctor-patient relationships. What can we do to minimize the damage?

Throughout history, plagues have brought out the best and the worst in people. This holds for physicians, for patients, and for society in general. As this issue of *The Journal* goes to press, the United States Senate has just passed an amendment sponsored by Sen. Jesse Helms (R-NC) which would make performance of an invasive procedure by an HIV-positive HCW a criminal offense. The Helms amendment dramatizes the high stakes —even though the eventual legislation is likely to be less drastic.

All of this seems to be much ado about relatively little. The AIDS/HIV pandemic is now ten years old. The celebrated case of the Florida dentist remains the only published instance in which HCW-to-patient transmission of HIV has been strongly suggested.[1] Others will no doubt follow, but it is reassuring that detailed investigations of large surgical practices have failed to show HIV transmission by infected surgeons. On the other hand, there have been at least 40 documented instances of patient-to-HCW transmission. Why have these cases not received equal attention? Still . . .

Still, the public has the right to reasonable safety and we have the duty to act responsibly. Let us consider three aspects: the broad issues; the recent CDC guidelines; and the best way to implement these guidelines.

THE BROAD ISSUES

The infected healthcare worker stands in the middle of a triangle of three issues: the duty to treat; the testing of healthcare workers; and the testing of patients (Figure 1).

Although various organizations have held that we must treat HIV-infected patients within our areas of competence, and although discrimination against HIV-infected (or any other) patients is clearly undesirable, the risks to healthcare workers from certain procedures are not inconsequential. By one estimate, the risk of HIV infection among surgeons from performing 25 operations on infected patients is about 272 per 100,000; by comparison, the risk of fatal injury during one year's work on a Louisiana oil rig is between 188 and 283 per 100,000.[2] By another estimate, the risk of HIV infection among San Francisco interns in internal medicine was determined to be one in 1,000, compared to an annual fatality rate among California police officers of one in 4,000.[3]

When and how should HCWs be tested? When and how should patients be tested? When and how should our duty to treat be affected—if at all—by the test results?

In an editorial last September, I outlined five proposals.[4] Three of these are reflected by the new CDC guidelines:

*Establish an ethical standard that HCWs at risk of HIV infection should be tested for HIV antibodies—voluntarily and confidentially.

*Establish an ethical standard that HIV-positive HCWs should seek appropriate consultation and follow-up including advice about the range of their activities.

*Endorse universal precautions as a standard of medical care.

I still feel strongly about my first proposal: Federal legislation to create a national insurance policy on the lives and careers of persons who have been convincingly shown to have acquired HIV infection while rendering (or receiving) medical care or emergency

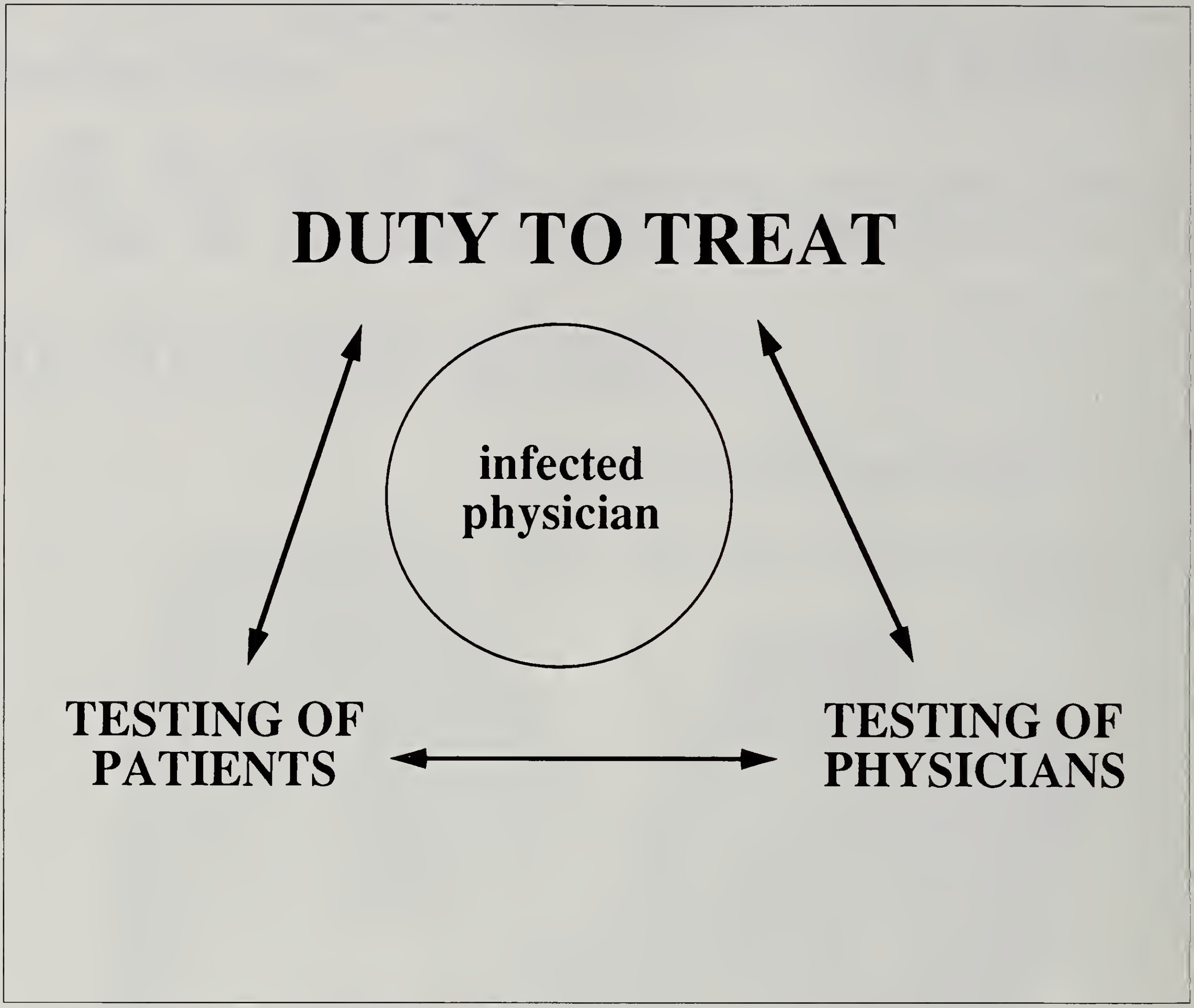

FIGURE 1: Although the issue-of-the-moment seems to be the infected physician, three other issues—the duty to treat, the testing of patients, and the testing of physicians—are also of central importance.

care. The cost of such a policy should be far less than the cost of mandatory testing of all HCWs!

A case can be made that mandatory testing is never appropriate. However, data suggest that universal precautions are not always followed, despite the best intentions.[5] HIV testing of patients scheduled for elective surgery may be justified on the basis of the desirability of taking zidovudine (AZT) immediately after an inadvertent blood exposure.

THE CDC RECOMMENDATIONS

The long-awaited CDC guidelines reflect input from a variety of sources, including the American Medical Association and the American Dental Association.[6] In essence, these guidelines hold that health-care workers who perform exposure-prone invasive procedures should know their HIV and hepatitis B antibody status and act appropriately if the results are positive. The guidelines can be summarized as follows:

*An *invasive procedure* is defined by "surgical entry into tissues, cavities, or organs or repair of major traumatic injuries" associated with surgery of any kind, obstetrical procedures, management of trauma, cardiac catheterization, or angiography.

*An *exposure-prone procedure* involves "digital palpation of a needle tip in a body cavity or the simultaneous presence of the HCW's fingers and a needle or other sharp instrument or object in a poorly visualized or highly confined anatomic site."

*Healthcare workers who perform exposure-prone invasive procedures should know their HIV antibody status and also their hepatitis B antibody status. Those who do not have immunity to hepatitis B should also know their HBsAg status and—if HBsAg-positive—should know their HBeAg status.

*Healthcare workers who are HIV-positive and/or HBeAg-positive should not participate in exposure-prone procedures *unless* given clearance to do so by an expert review panel. An expert review panel would stipulate "under what circumstances" such procedures could be performed, and these "circumstances would include notifying prospective patients" of the healthcare worker's seropositivity.

*An expert review panel might include the healthcare worker's personal physician(s); an infectious disease specialist; a professional with expertise in the procedures performed by the healthcare worker; and state or local healthcare officials.

*Mandatory testing of healthcare workers for HIV antibody, HBsAg, and HBeAg is not recommended for the following reason:

> The current assessment of the risk that infected HCWs will transmit HIV or HBV to patients during exposure-prone procedures does not support the diversion of resources that would be required to implement mandatory testing programs. Compliance by HCWs with recommendations can be increased through education, training, and appropriate confidentiality safeguards.

IMPLEMENTATION

The CDC guidelines were proposed with the expectation that they would be widely adopted. However, the guidelines leave open the issue of who would supervise their implementation.

It is important to note that the CDC opposed mandatory testing. Proponents of wide-scale mandatory testing should be aware of the likelihood that large numbers of HCWs will have false-positive results including "indeterminate" Western blot results.[7] At face value, requiring that HCWs who carry out exposure-prone procedures "know their HIV antibody status" seems quite reasonable. However, many have protested that voluntary testing programs simply will not work.

For most physicians, compliance with the recommendations could be assured through the medical staff offices of their hospitals. Physicians applying for staff privileges to carry out exposure-prone procedures (as defined by the CDC with modification by local medical staffs, when appropriate) could be required to sign a statement to the effect that they have had their blood tested for HIV and hepatitis B antibodies and—if positive—have acted appropriately. This leaves open the issue of who would make up the "expert review panel." Already, the SCMA is discussing ways by which such panels could safeguard confidentiality.

However, it now seems likely that lawmakers will have the final say. At this time, one scenario before Congress would require all states to implement and enforce the new CDC guidelines or lose certain federal funds. We cannot control what Congress or any other legislative body will ultimately decide. However, we can and must provide input, and we can and must insure that such input reflects the public interest as well as our own.

Commenting on the Black Death of the 14the Century, an historian noted:

> One of the most important legacies of the Black Death was the destruction of the existing medical system and the beginning of its modern successor.[8]

The eventual development of an effective vaccine may render our present dilemmas to be of historical interest only—yet the human immunodeficiency virus will have left its own set of legacies. Our best recourse is the Golden Rule. I recommend to my surgical colleagues that they be able to say to their patients: "I've been tested for your safety . . . and I want you to be tested for my safety."

—CSB

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Letters to the Editor

DO NOT RESUSCITATE?

To the Editor:

One gloomy Wednesday afternoon, I was greeted in my office by Mr. T.C.'s wife. Several weeks prior to our conversation, Mr. T.C. had a cardiac arrest. I happened to be present and initiated a successful resuscitation. Understandably, Mrs. T.C. was very thankful and her thanks were gratifying. I was unaware of how successful this resuscitation was. Mrs. T.C. told me a remarkable tale that was subsequently confirmed by her family.

On June 22, 1987, T.C. had a "stroke." According to Mrs. T.C., "I was reading the newspaper when I heard him struggle. I checked him and he was half on the bed. The only thing I could understand was 'mama' after the stroke. He called me 'mama' and treated me as he would have her. I could not do anything other than what his mother might have done. Write checks, go to the bank, or drive was out of the question. During the next year and a half, T.C. remained confused. He constantly needed someone with him. He would not stay in the car by himself. He did not know his grandchildren, children, or neighbors. His disposition was very bad. He constantly argued with me and his children. Then, when he was given the electric shock on December 18, 1988 (during cardiopulmonary resuscitation), he woke up and called me 'honey' as he always had! He knew our grandchildren, children, and neighbors by name. Our neighbors could not believe that he knew them. I know this is an awful thing to happen in a family (cardiac arrest), but, to our family it has been a blessing."

I asked a psychiatrist colleague if he had any explanation for this miraculous event. The only thing that he could think of was that T.C. was clinically depressed prior to his cardiac arrest. The electrical shock might have caused a seizure which would have been the equivalent of electroconvulsive therapy for depression. A review of the cardiac arrest indicated that the patient did not have a seizure although he was successfully defibrillated.

Subsequent to the hospitalization and cardiac arrest T.C. developed progressive renal failure. He has received chronic dialysis for almost two years and is one of our favorite patients.

Because of his dementia, T.C. may have received a "do not resuscitate" (DNR) order if he were hospitalized in 1991 instead of 1987. The "therapeutic" defibrillation that occurred in T.C. must be very rare. Nevertheless, we have seen several patients initially made "DNR" because of dementia who subsequently demonstrated dramatic improvement in their mental competency. Thus, dementia by itself should not be considered grounds for a do not resuscitate decision.

STEVEN J. ROSANSKY, M.D.
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Columbia, SC 29201

THE RED RIBBON CAMPAIGN

To the Editor:

The Red Ribbon Campaign, which is "NEIGHBORS DRUG FREE and PROUD," will be held October 19-27, 1991. The wearing or displaying the Red Ribbon will symbolize a commitment toward a healthy drug free lifestyle.

Fifteen percent of the population have alcohol and drug related problems. We in the Medical Community can play a big part toward achieving the goal of "NEIGHBORS DRUG FREE and PROUD," by showing our patients that we care about this aspect of their lives, by taking part in this campaign.

Each physician can receive a packet containing a list of materials that he or she may purchase for this campaign, or if so chooses, he or she may provide their own red ribbons.

Physicians can play a vital role in the prevention and treatment of alcoholism and drug abuse by looking behind the obscure complaints their patients manifest when they come in for a visit, and to see if they may be related to a more severe deep seated problem, such as alcohol and drug abuse.

We can be the gateway to helping troubled patients in our offices, or be able to refer them to appropriate available community resources. The problems are there, but we as physicians have to realize this and to look for them!

Each doctor and his staff should wear a red ribbon during this time, to show their commitment to work for drug free life and then continue to be involved with their patients in seeking better ways to handle life's trials and tribulations rather than using alcohol and drugs as a solution to their problems.

The presentation of a red ribbon to your patients, especially the younger ones, will show your commitment to the idea that a drug free lifestyle is a much better way to go, and oh!, so much healthier.

Your involvement will make a tremendous difference in the months and years ahead, as we in medicine become an important gateway through which your patients and their families have a much fuller and healthier lifestyle.

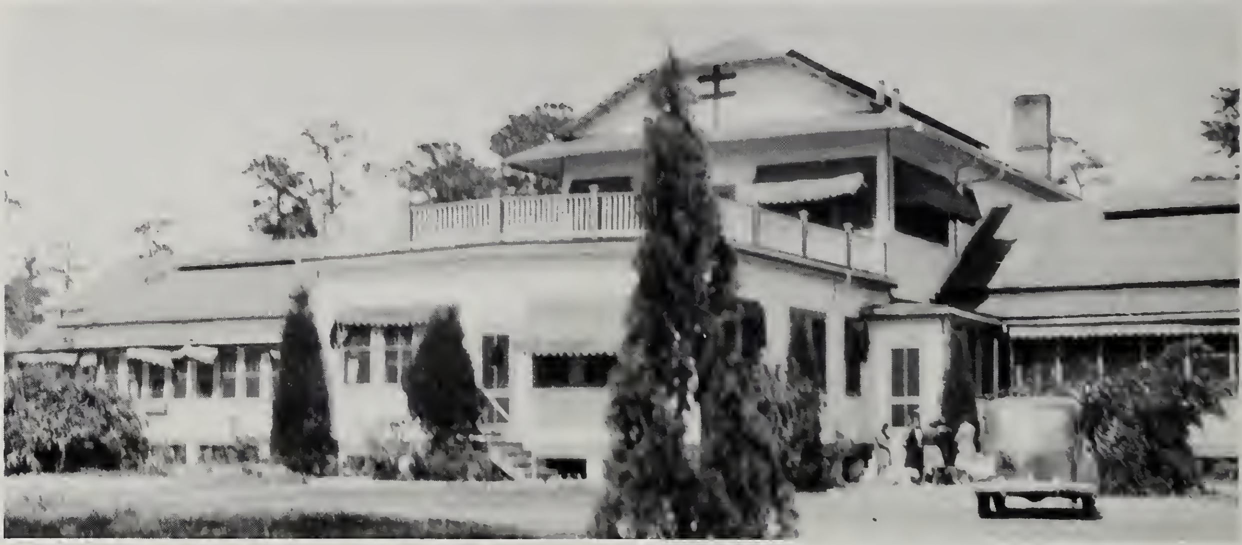
Wear a RED RIBBON, October 19-27, 1991.

Get involved with your patients' problems, help them to find acceptable solutions and see the difference you can make.

Benjamin O. Stands, M.D.
714 Hampton Hill Drive
Columbia, SC 29209

On the Cover:

PINEHAVEN SANATORIUM



Old Pinehaven Sanatorium, 1924-1953

In the 17th, 18th, and 19th centuries, pulmonary tuberculosis was a major cause of premature death. In 1800, a physician wrote, "There is no more dangerous disease than pulmonary phthisis and no other is so common . . . it destroys a very great part of the human race." In Charleston in 1888, TB was the cause of one death in every seven and in 1897, 233 people died of it. Although there has been a dramatic drop in the number of deaths in South Carolina in the 20th century, tuberculosis remains a threat.

In 1922, under the leadership of Dr. Leon Banov, Health Officer for the City of Charleston, the County Legislative Delegation appropriated funds for construction of a cantonment type structure for the care of TB patients. Because of the belief in the virtues of country air in the treatment, the sanatorium was built about six miles outside of the city. To save money, lumber, plumbing fixtures and other materials were obtained from World War I surplus. Because the regimen of rest, fresh air, and good food was the best known treatment, the "open type" construction was considered desirable. The wooden frame buildings consisted of an enclosed portion which housed offices and other special rooms. The wings which housed patients (our cover picture this month) were primarily porches containing approximately 20 beds each and having small stalls into which beds could be pulled during inclement weather since the porch roofs did not extend the width of the porches.

Pinehaven Tuberculosis Hospital, 1953. Now Charleston Memorial Hospital.

Through the years, Pinehaven cared with compassion and in the best tradition of medicine for its patients. Increased technology, drastic changes in treatment, and the steady deterioration of the primitive buildings, however, indicated that a more modern facility was needed. In 1953 the new Pinehaven hospital was built, thus bringing to an end the era of the sanatoria.

Betty Newsom
The Waring Historical Library

President's Page

AIDS TESTING: SCIENCE VS. HYSTERIA

From the start AIDS has been both political and controversial. The latest debate centers on HIV testing for physicians and healthcare workers.

Public sentiment for mandatory AIDS testing of physicians has been growing since the first reports of five patients being infected by a Florida dentist. The method of transmission is still unknown, but it is probably related to poor infection control and inadequate sterile technique. After numerous "look back studies" there have been no known cases transmitted from an HIV-infected physician.

In January the AMA Board of Trustees made the following recommendation: HIV-positive physicians should "abstain from performing invasive procedures that pose an identifiable risk of transmission" or disclose their HIV status to the patient and obtain informed consent prior to the procedure. An editorial in the Florence, S.C. *Morning News* advised that "doctors or dentists with AIDS should tell their patients simply because it's the honorable thing to do." Various polls have indicated that 70 percent of Americans favor mandatory HIV testing for healthcare workers, and 94 percent feel that an HIV-positive physician should tell his patients.

We all understand the public's fear of this disease, and physicians share that fear. An informal poll at the June AMA meeting indicated that a vast majority of doctors would not seek treatment from an HIV-infected physician. We have every reason to believe that if word gets out that a physician has AIDS, he may as well take down his shingle; his practice will evaporate.

As a surgeon I have great concern about contracting this disease during the ordinary performance of surgery, despite using universal precautions. Of the 6,782 healthcare workers who are HIV-positive, only 40 of them were infected through occupational exposure. In March 1991, 3,420 orthopedic surgeons were tested for HIV at a national meeting, and only two were found to be positive. Both these surgeons reported having risk factors outside of their work. These studies are reassuring but should not lead us to relax our precautions during invasive procedures. The risk, however small, is still real.

The Centers for Disease Control issued its recommendations in July and rejected mandatory testing of healthcare workers. The CDC emphasized universal precautions and restrictions for HIV-positive physicians only for the performance of "exposure-prone procedures." The risk for transmission of the virus from an infected surgeon to a patient during an invasive procedure is exceedingly small. One report at the 1991 International AIDS Congress estimated the risk as one in 48,000. The CDC estimates the risk at eight percent over a seven-year period.

How will this issue be decided? Will the public, Congress, state legislatures, or hospital administrators be satisfied with anything less than routine mandatory testing of physicians? On the other hand, should we as physicians simply give the public what it wants, even though it will not significantly decrease the risk of transmission of this disease and will be an unnecessary expense to a healthcare system that is already over budget?

Isn't it time to loosen the restrictions on appropriate HIV testing of patients? In the long run that might do more to improve public safety than testing physicians and healthcare workers.

On this issue, as with all others, the medical profession must side with facts instead of fear. Clearly we need to educate the public. The SCMA has developed a program to comply with the CDC guidelines, insure confidential testing of physicians, and protect the public. We must promote our program to insure that the public is protected from its fear and that physicians are not sacrificed to hysteria.

J Chris Hawk III MD

J. CHRIS HAWK, III, M.D.
President

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UPPER GASTROINTESTINAL TRANSIT IN HUMANS*

STEPHEN HOLT, M.B.**

The measurement of transit of luminal contents through the gastrointestinal tract provides an overall assessment of coordinated motor function.[1] Changes in transit or anterograde or retrograde flow of gastrointestinal contents can result from an obstructed lumen or altered motility. Hypercontraction, hypocontraction or incoordinate contraction of gastrointestinal musculature or some combination of these motor abnormalities may be apparent when transit is studied. Traditionally, evaluation of the upper gastrointestinal transit involves the use of contrast radiology or manometry. Observations of gastrointestinal transit by x-ray methods around the turn of the century provided much clarification of the role of motility in the propulsion or retropulsion of ingested material from the mouth to small intestine.[1] For the first half of this century scientific interest tended to focus on manometric methods for the study of motility but the advent of semiquantitative radiologic methods, especially videofluoroscopy, ultrasound and nuclear medicine techniques reawakened interest in the study of transit as a diagnostic indicator of abnormal motor function in the upper gastrointestinal tract.

Traditionally, evaluation of upper gastrointestinal function has involved the use of contrast studies utilizing barium sulfate or manometry utilizing sophisticated transducer equipment. My colleagues and I and others have pursued the possibility that use of radionuclide scanning might provide similar data in a non-invasive manner with a high degree of patient acceptability. The purpose of this paper is to summarize pertinent data related to the evaluation of upper gastrointestinal transit by scintigraphy, which may have wider applicability with the institution of scanning protocols that have been previously published.

WHY MEASURE UPPER GASTROINTESTINAL TRANSIT?

Many methods applied to the study of gastrointestinal motility possess disadvantages or limitations.[2, 3] Manometry requires intubation and is disliked by volunteers and patients. The presence of the tube assembly may itself provoke dysmotility. Radiological methods are at best only semiquantitative and involve exposure to relatively large amounts of ionizing radiation.[2] Electrical recording of motor events often requires surgical placement of electrodes and its use is limited to tertiary referral centers.[2] In contrast, nuclear medicine techniques permit the quantitative study of the movement of radiolabeled gastrointestinal contents under physiological conditions, thereby providing accurate data about gastrointestinal motor function.[2, 3]

Nuclear medicine techniques are applicable to the non-invasive study of swallowing (oropharyngeal motor function),[4] transit through the body of the esophagus (esophageal motility),[5, 6] the retrograde flow of gastric contents across the gastroesophageal junction (gastroesophageal reflux, GER),[5, 6] the rate of emptying of the stomach,[2, 3, 7-13] and the retrograde flow of intestinal contents into the stomach (duodenogastric reflux).[14] Studies of swallowing may help define the cause of symptoms of oropharyngeal dysphagia[4] and esophageal transit has been proposed as a screening method for the study of esophageal dysmotility.[5, 6] Scintiscanning to detect gastroesophageal reflux has been applied to the diagnosis of gastroesophageal reflux disease (GERD)[5, 6] and scanning for duodenogastric reflux assists in the determination of the contribution of bile reflux to dyspeptic symptoms.[14] Gastric emptying rate measurement has served an important role in the assessment of patients with symptoms suggestive of gastric motor dysfunction in a wide variety of circumstances such as anorexia,[11] non-specific dyspepsia,[15] following gastric surgery,[12] in patients with duodenal ulcer[16] and in circumstances of autonomic neuropathy or systemic diseases of diverse cause.[2, 3]

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The rate of gastric emptying has been shown to be important in the determination of the rate of absorption of drugs and nutrients, thereby shedding some light on important drug absorption-motility interactions of clinical significance that may determine conditions such as therapeutic failure and effect of food and other pharmacological agents on drug absorption.[12, 17, 18] The availability of nuclear medicine facilities in urban areas in South Carolina affords the opportunity of utilizing several scintigraphic measures of upper gastrointestinal transit in clinical practice (Table 1). Protocols for these tests have been widely published in the literature and are available in the references quoted at the end of the text.

SCINTIGRAPHIC STUDIES OF SWALLOWING

Cineradiography has been used frequently for the study of oropharyngeal dysphagia but it yields only semiquantitative data.[4] Frame by frame analysis can provide good anatomic detail but aspiration of contrast material may occur and radiation exposure is significant. High resolution, cine fluoroscopy and newer manometric techniques, including intracricopharyngeal transducer placement or the use of sleeve catheters, can provide useful data but this technology is most often found in tertiary referral centers. Scintigraphic studies of oropharyngeal transit permit the non-invasive quantitative study of pre-esophageal dysphagia ("transfer dysphagia") that could be readily applied to the study of the effect of drugs, diseases and physiological factors on swallowing.

In a recent study,[4] scintigraphic studies of oropharyngeal transit were performed in 15 healthy volunteers, 13 patients with neuromuscular disease who did not have dysphagia and 12 patients with swallowing dysfunction as a consequence of neuromuscular disease of diverse cause. Imaging of the head, neck and thorax, in the lateral projection, with a gamma camera during the swallowing of a radiolabeled bolus (10ml H_20, containing ^{99m}-Tc sulfur colloid) permitted the selection of regions of interest to represent the mouth, pharynx and upper esophagus and the comparison of transit times between these compartments after subjecting radioactivity-time curves to first derivative analysis (Fig. 1). This scintiscanning method for the study of oropharyngeal transit is analogous to scintigraphic techniques that are used in the assessment of ventricular function in cardiac investigations. This new test of deglutitive scintigraphy has the ability to detect and quantitate abnormalities in swallowing in patients with oropharyngeal dysphagia.[4] Oropharyngeal swallowing problems are often seen in hospital practice and their characterization by transit studies may assist in management of these difficult problems (Table 1).

TRANSIT—REFLUX SCINTIGRAPHY

Scintigraphic scanning of the thorax following the ingestion of a radiolabeled bolus of water or acidified fruit juice permits the measurement of transit through the body of the esophagus (Figure 2).[5, 6] This test has been proposed as an accurate screening method for the detection of esophageal motor dysfunction but it lacks reproducibility even in healthy volunteers,[5, 6] thereby limiting its use as a valid measure of sequential changes in motor function. In the absence of facilities for

TABLE I.

SCINTIGRAPHIC TESTS OF UPPER GASTROINTESTINAL TRANSIT AND THEIR POTENTIAL CLINICAL APPLICATIONS.

Scintigraphic Tests	*Clinical Application*
Oropharyngeal Transit	Quantitation of pre-esophageal dysphagia of diverse cause, may be of prognostic significance.
Esophageal Transit	Diagnosis of esophageal dysmotility of diverse cause e.g., achalasia, esophageal spasm. Assessment of efficacy of drugs that modulate esophageal motility.
Esophageal Reflux Scan	Diagnosis of gastroesophageal reflux disease without intubation. A less sensitive but acceptable alternative to pH monitoring.
Gastric Emptying Rate Measurement	Diagnosis and monitoring of gastric motor disorder of diverse cause, e.g., gastroparesis, post gastrectomy motor disorder.
Duodenogastric Reflux Scan	Diagnosis of biliary gastritis and some post gastrectomy symptoms.

manometric assessment of the esophagus, transit scintigraphy can provide useful diagnostic information (Table 1).

The technique of esophageal transit measurement can be combined with scintigraphic studies of gastroesophageal reflux.[5, 6] Upon completion of the transit study the subject can drink 300ml of 0.1N hydrochloric acid in order to produce homogeneous mixing of previously ingested radioactivity in the stomach. The application of pressure to the upper abdomen with repeat scanning of the lower chest has been used to produce a reflux scan in some protocols whereas other studies have observed spontaneous reflux. The percentage of the radioisotope that is refluxed above the gastroesophageal junction can be calculated, thereby providing a technique for combined reflux and transit measurement in the esophagus.[5, 6] Heartburn is a common symptom that determines consultation in primary care practice. A reflux scan could be utilized in community practice or circumstances where pH probe monitoring is unavailable (Table 1).

GASTRIC EMPTYING RATE MEASUREMENT

External scintigraphic detection of a gamma emitting isotope that has been incorporated into a test meal provides a generally accepted method for the non-invasive detection of gastric emptying rate.[2, 3] Following the ingestion of a dual radiolabeled test meal the rate and pattern of emptying of the solid and liquid components of a test meal can be determined (Figure 3).[2, 3] Liquids empty in an approximately exponential manner with time and solids empty in an approximate linear manner due to the grinding and mixing activity of the gastric antrum (Figure 3)[2, 7] Many factors such as posture, imaging protocol and other physiological or pathological variables determine the accuracy of results of gastric emptying rate measurement in humans.[2]

The rate of absorption of many orally administered drugs or nutrients is dependent on gastric emptying rate,[10, 17] such that alterations in emptying rate can be inferred from alterations in the absorption kinetics of freely diffusible compounds such as alcohol or acetaminophen.[10, 17, 18] Delayed gastric emptying explains the beneficial effects of gel fibers on the treatment of diabetes mellitus, assists in our understanding of therapeutic failure of orally administered drugs and provides a basis and understanding of the pathophysiological derangement in patients with dyspepsia or anorexia.[2, 15, 11] Scintigraphic studies can be used to validate the development of other non-invasive measures of gastric emptying, such as the use of real-time ultrasound

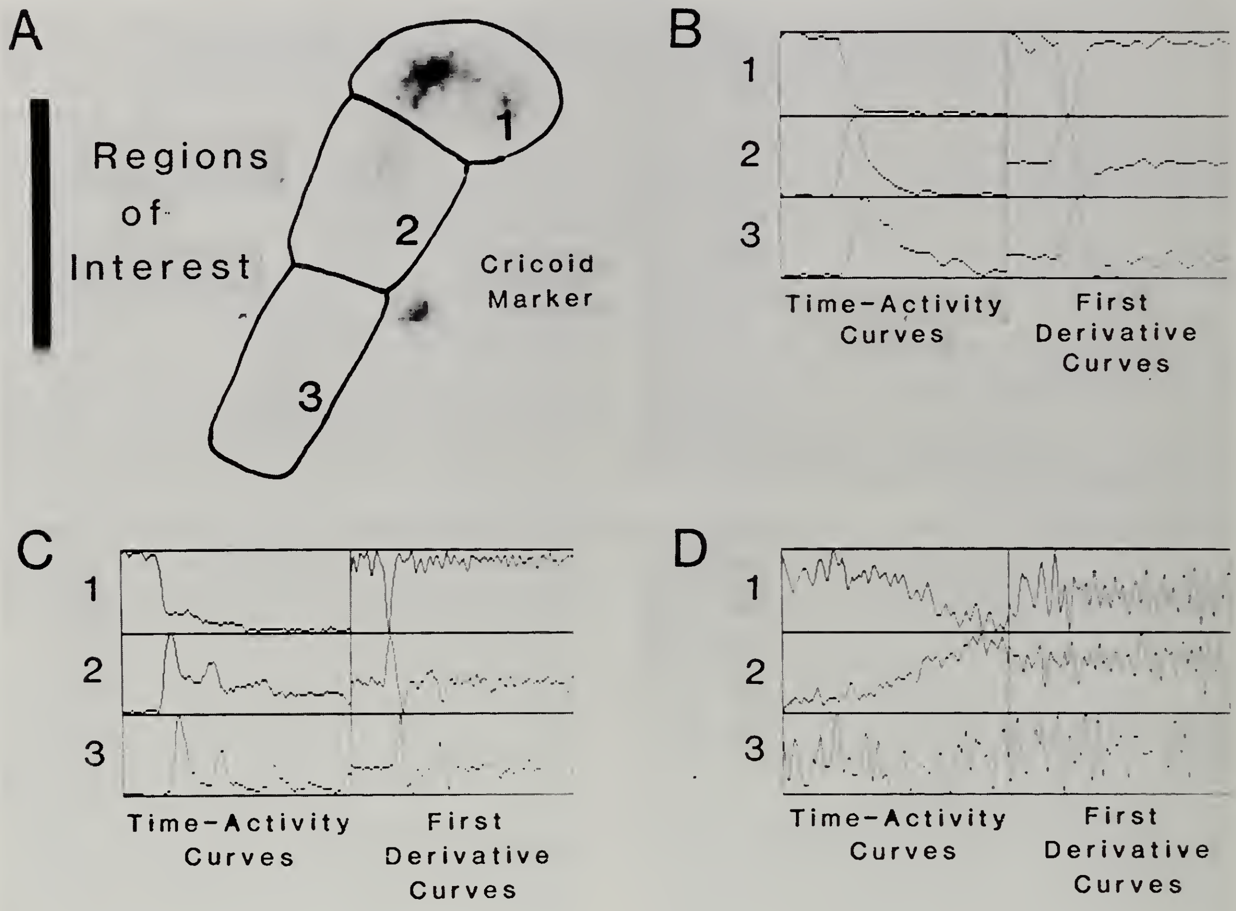

FIG. 1. (A) Scintiscan of the oropharynx in which selected regions of interest have been drawn to represent the mouth (1), pharynx (2), and esophagus (3). The time-activity curves (time on horizontal axis, counts on vertical axis) that are constructed from the area of the mouth (1), pharynx (2) and esophagus (3), together with corresponding first derivative curves are shown in B-D. The peaks and nadirs correspond to peak emptying or filling rates of the respective compartments. (B) Transit data recorded from a swallow in a control subject. (C and D) Abnormal bolus transit in two patients (one with bulbar palsy and one with myasthenia gravis) that is manifest by major change in pattern of the time-activity and first-derivative curves. Holt et al 1990. Reproduced by permission of the editor of *Digestive Diseases and Sciences*.

for the measurement of the gastric emptying of liquids in humans.[19] Gastric emptying rate measurements can define circumstances of rapid or slow gastric emptying in a wide variety of clinical circumstances (Table 1).[2, 3; 15] The presenting symptoms that may signal the presence of gastric motor dysfunction are listed in Table 2.

STUDIES OF DUODENOGASTRIC REFLUX

It is believed that bile should not be present in the stomach in significant amounts in healthy individuals. Enterogastric reflux is believed to play an important role in the pathogenesis of upper gastrointestinal disease such as biliary gastritis, peptic ulcer and esophagitis.[14] A scintigraphic technique has been developed for the measurement of duodenogastric reflux using ^{99m}-Tc-p-butyl iminodiacetic acid which is non-invasive and physiological.[14] For this technique, hepatobiliary scanning was performed using technetium labeled iminodiacetic acid derivatives or analogues.[14] The patient receives a drink of water containing a radionuclide that permits the selection of regions of interest on a scintiscan to represent the liver, gallbladder, heart, stomach, duodenum and small bowel. Scintiscans permit the examination of time-radioactivity curves and

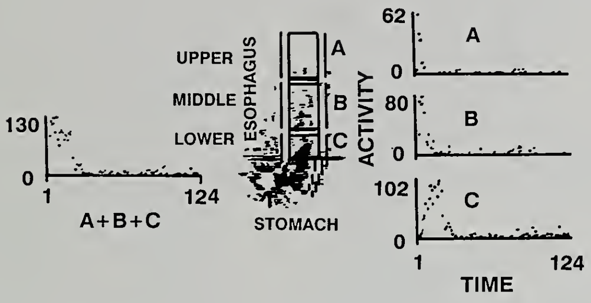

FIG. 2. Esophageal scintigram used in transit studies showing selection of regions of interest in A, upper esophagus, B, middle esophagus and C, lower esophagus with parallel adjacent lines drawn for background correction. Time activity curves in selected regions of esophagus are shown; A+B+C represents composite time-activity curve in whole esophagus.

enterogastric reflux can be expressed as a percentage of the total radioactivity excreted by the liver. Duodenogastric reflux has been shown to be a frequent finding in patients following partial gastrectomy[14] and it may diminish with the healing of gastric ulceration.

CONCLUSION

The diagnosis of upper gastrointestinal dysmotility involves the clinician and patient in a number of uncomfortable, costly and time-consuming procedures. The development and application of scintigraphic techniques to assess swallowing, esophageal transit and gastroesophageal reflux, gastric emptying rate or duodenogastric reflux have produced information that is relevant to the management and understanding of a variety of gastrointestinal and systemic diseases.[2-19] Simultaneous studies of the absorption of model drugs and gastric emptying rate have clarified several absorption-motility interactions of therapeutic and clinical significance. The application of nuclear medicine techniques to the study of upper esophageal transit has provided major advances in our understanding of several gastrointestinal and systemic diseases. Such tests are a readily available option for the diagnosis and management of a variety of diseases in general clinical practice. ☐

TABLE 2.

Symptoms that may suggest gastric motor dysfunction that could be elucidated by scintigraphic gastric emptying rate measurement. There may be overlap in symptoms and organic lesions in the upper gastrointestinal tract should be diagnosed by conventional tests such as contrast radiology or endoscopy. The common disorders of non-ulcer dyspepsia in the adult or non-specific abdominal upset in children may be associated often with gastric motor disorders.[2,3,15]

Symptoms of Rapid Gastric Emptying	*Symptoms of Delayed Gastric Emptying*
Dumping Syndrome	Anorexia
Anxiety	Bloating
Light-headed Feeling	Epigastric Pain
Sweating	Early Satiety
Nausea	Vomiting
Anorexia	Weight Loss

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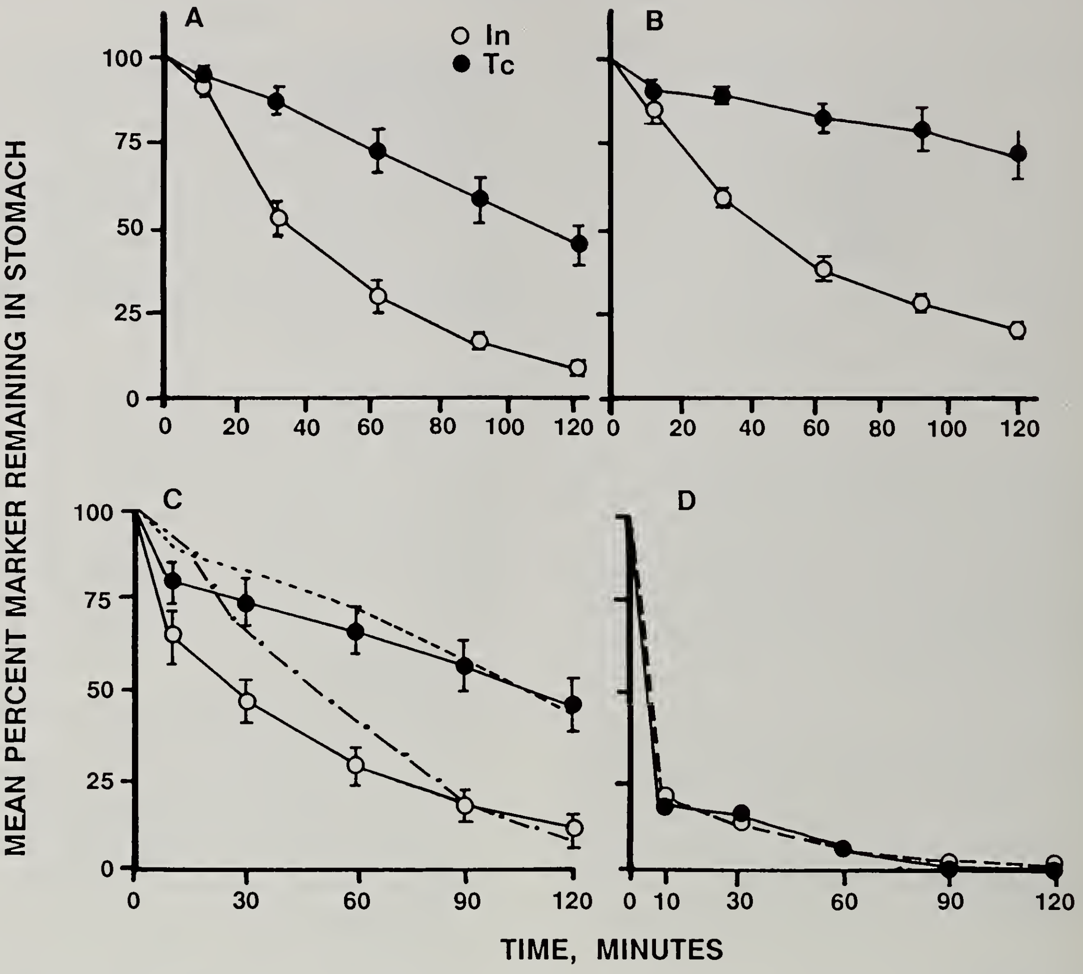

FIG. 3. (A) and (B) Gastric emptying of the solid and liquid components of two test meals of different energy density and fat content in 12 healthy subjects. The sold component of the test meals consisted of filter paper particles that had been labelled with ^{99m}Tc and the liquid phase was labelled with ^{113m}In. One meal (b) was of higher fat content and energy density than the other (a) and emptying of both solids and liquids are slower in (b). Data are mean ± SE.

(C) Gastric emptying of solids (•) and liquids (°) in patients who have undergone truncal vagotomy and pyloroplasty (more than 6 months earlier). ••••• = Control studies of solid and liquid emptying in 12 healthy subjects. The early emptying of solids and liquids in the postgastric surgery group is faster than in controls. Data are mean ± SE.

(D) Gastric incontinence is apparent with rapid emptying of solids (•) and liquids (°) in a patient who had severe diarrhea following partial gastrectomy. There is complete loss of solid and liquid discrimination.

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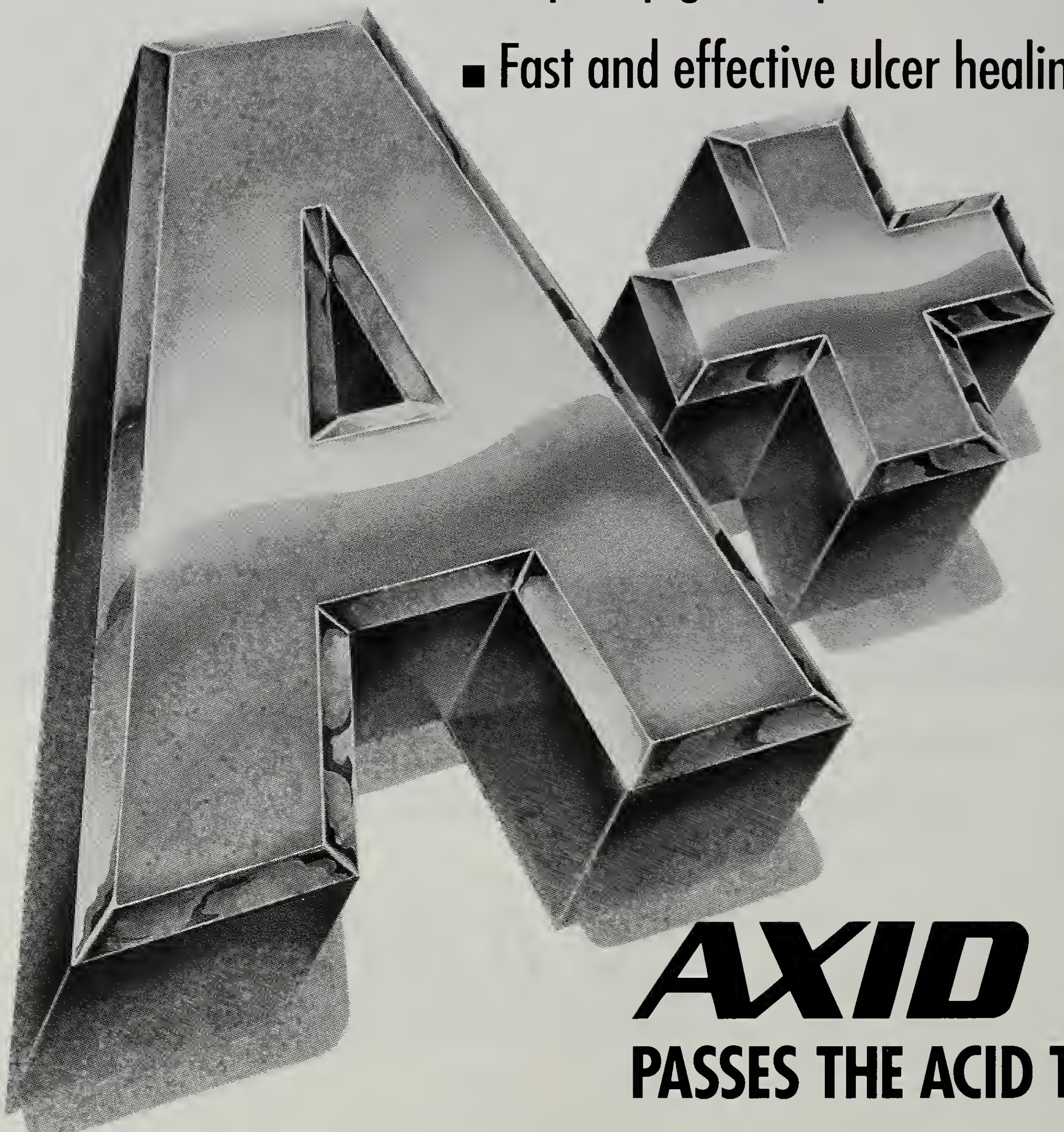

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See adjacent page for references and brief summary of prescribing information.

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Indications and Usage: 1. *Active duodenal ulcer*—for up to 8 weeks of treatment. Most patients heal within 4 weeks.

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Contraindications: Known hypersensitivity to the drug. Because cross sensitivity in this class of compounds has been observed, H_2-receptor antagonists, including Axid, should not be administered to patients with a history of hypersensitivity to other H_2-receptor antagonists.

Precautions: *General*—1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Dosage should be reduced in patients with moderate to severe renal insufficiency.

3. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

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Drug Interactions—No interactions have been observed with theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450 enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increased serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility—A 2-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a 2-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a 2-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in 1 fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in 1 fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use—Safety and effectiveness in children have not been established.

Use in Elderly Patients—Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events were due to the drug.

Hepatic—Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to 3 times the upper limit of normal, however, did not significantly differ from that in placebo patients. All abnormalities were reversible after discontinuation of Axid. Since market introduction, hepatitis and jaundice have been reported. Rare cases of cholestatic or mixed hepatocellular and cholestatic injury with jaundice have been reported with reversal of the abnormalities after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in 2 individuals administered Axid and in 3 untreated subjects.

CNS—Rare cases of reversible mental confusion have been reported.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic—Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity—As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis does not substantially increase clearance of nizatidine due to its large volume of distribution.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:
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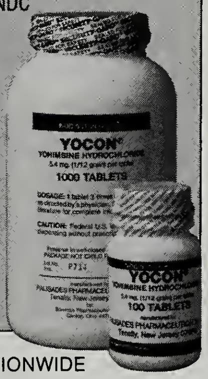

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SINUSITIS AND HEADACHE

JUAN A. BROWN, M.D.*

Headaches involve some of the most difficult diagnostic and therapeutic decisions in general practice and many prove to be of sinus origin. Stammberger describes three headache classifications; sinus disease caused by infection, allergy, polyps and benign tumor is the most common. The second group of central nervous system abnormalities includes neoplasm, ocular disease, migraine and temporomandibular joint conditions. The third doesn't fit into any of the other two categories, yet is generally thought to be of functional or hysterical origin by default.[1] Sinusitis and nasal deviation may be present in this third group despite the fact that sinus x-rays and anterior rhinoscopy are normal. Techniques and therapeutic measures are now available for evaluation and classification of this disorder.

Over the past five years, fiberoptic endoscopic examination and coronal computer tomography (CT) at the Anderson ENT Clinic have identified 570 patients with sinus and nasal abnormalities, culminating in 1,170 operations. In a retrospective review, a majority of the patients complained of facial pain and/or pressure, and 74 listed headache as the chief complaint. Sixty-nine had complete post-operative resolution of their headaches. The other five patients described improvement of their symptoms, generally associating the headaches with allergic congestion. Endoscopic sinus surgery/septoplasty did not aggravate the disease in any case.

Two representative cases that failed to respond to medical therapy illustrate the advantages of both the diagnostic procedure and endoscopic sinus surgery.

CASE REPORTS

CASE 1.

A 41-year-old white male complained of headaches with increasing frequency and intensity over the past year. The use of over-the-counter medications and ice packs for relief of pain even in college, and treatment by multiple physicians on different occasions achieved good results, but the symptoms recurred in a short period of time. The headaches localized to the glabella and frontal region and were particularly intense under the left eye. He described a sudden "popping" sound in his face followed by immediate relief. On a business trip with the change in cabin pressure during a flight, a significant illness with severe intractable pain which required intensive emergency treatment developed. The coronal CT revealed mucoperiosteal thickening in the right sphenoid air cell with an increase in soft tissue density in both the anterior ethmoid and maxillary sinuses. Endoscopic examination with anesthesia consisting of 0.5% Neosynephrine and 4% Xylocaine nasal spray exposed a serpentine deflection of the septum with 80% obstruction of the nasal passageway. Posterior to this deformity, which could not be visualized by anterior rhinoscopy, the septum was impacted against the middle turbinates crushing them laterally against the sinus wall, completely obstructing the osteomeatal unit and the middle meatus. At the time of endoscopic surgery a large amount of thick polypoid material was encountered bilaterally in the anterior ethmoids and the left posterior ethmoid. A septoplasty removed the pressure point from the middle turbinates, and the patient is more than eight months post-op and free of headaches and sinus infections.

CASE 2.

A 41-year-old female with a complaint of daily headaches for ten years had seen more than 14 physicians, including a neurosurgeon, neurologist and two otolaryngologists, many of whom concluded that the headaches were of functional origin. The neurosurgeon attributed the pain to neuralgia and suggested transection of the peripheral nerve. Previous otolaryngologic therapy had entailed sinus suction and allergy injections, without relief. The symptoms were heaviness and fullness across the nose and cheekbones, and pain over the maxillary teeth accompanied by intermittent low-grade fever and a foul odor. Temporary relief was obtained by sneezing or blowing her nose. Both the roentgenograms and the CT were reported as free of obstruction and disease, yet closer study identified mucosal thickening in the anterior ethmoids, particularly on the left side. Endoscopic examination disclosed a deviation of the posterior septum with the middle turbinates compacted laterally against the middle meatus occluding the osteomeatal units and a large amount of thick, polypoid material in the maxillary and anterior ethmoid sinuses. A septoplasty to alleviate the turbinate compression brought about immediate relief over six months post-op without recurrence of chronic headache pain.

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*Anderson ENT Clinic, 1303 McLees Road, Anderson, S.C. 29621-3344.

DISCUSSION

Headache is the most common complaint involving sinusitis (Table 1). Endoscopic examination with appropriate CT views can now document the mucosal disease and anatomical deformities which contribute to headaches. Sinuses are small containers with a very narrow neck; any obstruction of this outlet changes their physiology. Lack of ventilation and stagnation of the fluid leads to pain, congestion and infection. The anaerobic condition within the sinuses is thought to generate a release of chemical messengers or enzymes that further potentiate pain and discomfort.[1] Some patients describe a hissing, squeaking or popping noise as the channel suddenly opens, affording prompt relief. Fluid stagnation within the cavity kindles bacterial colony overgrowth, both anaerobic and aerobic, which further aggravates the obstruction and congestion.

A small region, as the anterior ethmoid and middle meatal complex, can provide a substantial site of disease and induce infection, severe pressure and pain.[2] Kennedy and Zinreich reported that mucosal abnormalities are most frequently located within the anterior ethmoid region,[3] a common source of facial pain. The CT may reveal mucosal disease such as polyps, thickening, opacification and complete obstruction of the osteomeatal unit, as well as anatomical defects which are further delineated at endoscopic examination (Table 2). Most commonly noted is the deflection of the septum in the posterior nasal vestibule on a bony spur which actually impinges or pierces the tender middle or inferior turbinates laterally. Turbinates are dynamic structures that continuously change their size for physiological results. Increasing congestion is followed by facial pain, a phenomenon that was documented by Wolf in 1948[4] and more recently has been expanded by Greenfield.[5]

TABLE 1

Symptoms of Sinusitis

1. Headache/Facial Pain
2. Nasal Stuffiness
3. Postnasal Drainage/Rhinorrhea
4. Abnormal/Diminished Taste and Smell
5. Sore Throat/Halitosis
6. Chronic Cough/Hoarseness
7. Epistaxis
8. Vertigo
9. Asthma/Bronchitis

TABLE 2

Anatomical Abnormalities

A. Deviated Nasal Septum
B. Septal Spur
C. Nasal Polyps
D. Concha Bullosa
E. Triangular Enlarged Head of Middle Turbinate
F. Enlarged Bulla Ethmoidalis
G. Enlarged, Bulging Agger Nasal Cells
H. Medially Enlarged Uncinate Process
I. Paradoxical Middle Turbinate
J. Heller Cell

Their observations outline the accurate neurological pathways which contribute to the headache pain.[4,5]

Patients previously considered medical failures now have a surgical, minimally invasive procedure for relief of pain and discomfort. Outpatient endoscopic sinus surgery and/or septoplasty is accomplished under general anesthesia unless underlying medical conditions require different management. Packing is not used post-operatively, and facial edema or ecchymosis is not an aftermath. The complication rate has been less than one percent over the past five years (Table 3).

TABLE 3
Complications

Major:	
CSF Leak [No neurological deficits]	1
Blindness [Vascular, neurologic]	0
Hemorrhage [Requiring transfusion]	0
Minor:	
Orbital [Hematoma, emphysema]	1
Nasolacrimal duct injury	2
Hemorrhage [Requiring packing observation]	8

SUMMARY

Nasal endoscopic examination and CT views of the sinuses were obtained in patients with symptoms of headache and sinusitis who had failed to respond to conservative medical therapy. Endoscopic sinus surgery has challenged traditional concepts of sinus disease management. The site of obstruction rather than the extent of the disease is the major concern. Removal of pressure points with re-establishment of a competent airway, and revision of sinus passageways to facilitate mucociliary drainage and ventilation of the obstructed cavity can benefit patients with chronic headaches. ☐

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SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION
Joy Drennen, Editor
798-6207, in Columbia
Contributions welcomed
1-800-327-1021, outside Columbia

OCTOBER 1991

MEDICARE UPDATE

September Workshops

The September regional Medicare workshops provided helpful information. Call Cindy Osborn at the SCMA if your staff was unable to attend a workshop and would like a copy of the materials.

Medical Necessity Documentation of Durable Medical Equipment

By now you should have received an August 1991 Medicare Advisory from BC/BS of SC. Please note that all certificates of medical necessity for DME must be completed by the physician or someone directly in his employ. The physician's signature must be handwritten by the physician himself. **NO STAMPS!**

Physicians should be advised that the Office of the Inspector General (OIG) considers solicitation of payment from suppliers to complete the Medicare-required forms a potential felony.

Unique Physician Identification Numbers (UPIN)

When completing the referring physician number in Block 19 of the HCFA-1500 form, use only the Alpha and the first five numbers from the UPIN directory.

Example: A12345

If you see that your UPIN number is listed incorrectly in the directory, please contact Medicare Provider Services at (803) 754-1968.

New HCFA 1500 Form

Some of you may have been given a new HCFA 1500 form and told that it was approved for use. **THIS IS *NOT* CORRECT.** The new HCFA 1500 forms are not yet approved. As this newsletter goes to press, changes are still being made.

Physician Payment Reform (PPR)

Workshops will be held in December regarding all the PPR changes. Watch for the times and dates in the Medicare advisories.

Automated Response Unit (ARU)

Effective September 16, 1991, when calling the Medicare Provider Service Center numbers, you will be greeted by the ARU. The phone numbers listed in the February, 1991 Medicare Advisory have been disconnected. The new numbers are

Part B Participating Providers (Including DME): (803) 735-1205

Part B Non-Participating Providers (Including DME): (803) 735-0634

Parenteral/Enteral Nutrition Providers: (803) 735-0513

Complete details on how to access claim status, Procedure Profile Amount, Limiting Charge, ordering reports and forms, etc., are listed in the August, 1991 Medicare Advisory.

MEDICARE UPDATE (Continued)

Fraud and Abuse

The definitions of what Medicare considers fraud, kickbacks, bribes, abuse, etc., are in the previously mentioned advisory which you and your staff should review carefully. The Medicare-Medicaid Anti-Fraud and Abuse Amendments, enacted October 25, 1977, upgraded most fraudulent acts from misdemeanors to felonies and can have severe penalties including imprisonment and fines. ☐

WASHINGTON UPDATE

The AMA has spearheaded an RBRVS campaign designed to bring pressure on HCFA to restore the 16 percent conversion factor cut (administrative remedy). The Federation has succeeded in generating an unprecedented level of Congressional support for medicine's position. The SCMA has contacted SC House members urging that they cosponsor H.R. 3070, introduced by Rep. Pete Stark (D-Ca.), which would impose a legislative solution that will achieve all of the AMA objectives on the conversion factor. Watch this newsletter for future RBRVS updates. ☐

PRO UPDATE

Medicare Preadmission/Preprocedure Review to end October 1, 1991

PROs have been advised by HCFA to cease all Medicare preadmission/preprocedure review as a standard requirement for all procedures, **except assistants at cataract surgery**, effective October 1, 1991. Telephone calls for prior authorization for the following procedures should not be made after September 30, 1991:

Permanent Cardiac Pacemaker
Implantation and Replacement
Lens Procedures
Cholecystectomy
Inguinal Hernia Repair
Joint Replacement
Endarterectomy
Coronary Artery Bypass
PTCA
Transurethral Prostatectomy
Hysterectomy

Requests for prior authorization of assistants at cataract surgery should continue. Prior authorizations for the Medicaid program is not affected by this change in Medicare requirements.

Questions regarding claims processing should be directed to your Medicare Part A Fiscal Intermediary or Medicare Part B Carrier. Other questions about this change can be answered by MRNC Review Specialists on the toll-free prior approval telephone lines. ☐

SCMA PRESIDENT ON "CROSSTALK"

J. Chris Hawk, III, MD, will be a guest panelist on "Crosstalk," a live, call-in talk show broadcast on ETV. Dr. Hawk will be joined by Edward Sellers, President, BC/BS of SC and a representative of the SC Hospital Association to discuss the escalating cost of medical care. Tune in on Monday, November 4 from 8:00 to 9:00 pm, or if you would like to be a member of the audience, contact Suzanne Hellams at the SCMA office by October 29. ☐

FROM THE OFFICE OF LEGAL AFFAIRS

Impact of the SC Use Tax on Physicians

South Carolina law imposes a five percent "use tax" on any tangible personal property purchased at retail for storage, use or other consumption in the state.

The use tax basically applies to sales originating outside the state of SC where state sales tax is not collected by the retailer. Thus, a physician buying supplies, pharmaceuticals, office equipment, etc. outside the state would be required to pay the five percent tax.

You should contact your tax advisor for further information.

Physician Responsibilities Concerning Living Wills

The Patient Self-Determination Act, effective December 1, 1991, will focus great attention on living wills and other advance directives.

Under the SC Death with Dignity Act, a physician who learns that a patient has revoked his living will must document in the medical record the place, date and time of the revocation. If a copy of the living will is attached to the record, it should be removed and destroyed.

A hospital employee who learns of a patient's intention to revoke the living will should inform the patient's nurse and physician, who should then follow the above procedure.

A REVOCATION IS NOT EFFECTIVE UNTIL IT IS COMMUNICATED TO THE ATTENDING PHYSICIAN!

Physicians who learn of the existence of a patient's living will should document the patient's chart of this fact and attach a copy of the living will to the record. □

INTERESTED IN INCREASING YOUR MEDICARE REIMBURSEMENT?

And do you practice in a rural area? Do you employ, or are you interested in employing a nurse practitioner or physician's assistant for at least 50 percent of their time? If so, you are encouraged to attend a special seminar sponsored by the SCMA and SCHA in Columbia on October 23, 1991.

A family physician from North Carolina who has reconfigured his private practice into a rural healthcare clinic will provide essential information on this special reimbursement system allowed by Congress.

In addition, there will be a CPA who has assisted physicians in their applications and SC physicians who have experience with the requirements of reorganizing a private practice into a rural healthcare clinic.

All physicians and their office manager or practice consultant are encouraged to attend this workshop. A brochure has been mailed to primary care physicians; *if you have not received one or would like additional information, please call Barbara Whittaker at the SCMA (1-800-327-1021) or Jim Walker at the SCHA (796-3080).* □

AIDS CLINICAL TUTORIALS

The SC AIDS Training Network and the USC School of Public Health has scheduled AIDS clinical tutorials to provide physicians with the knowledge and skills necessary to care for patients with HIV/AIDS and to increase the numbers of training physicians caring for patients with HIV/AIDS. The dates are October 18, 1991 and February 13 and April 16, 1992, 8:45 am - 5:00 pm. Faculty includes Doctors Bosko Postic, Jeffrey G. Gross and Charles S. Bryan. Seven AMA Category I credits will be awarded the attendees.

For more information, contact Melanie VanSant, RN, USC School of Public Health, Columbia 29208, 777-4845 . ❒

CPT-92

Now is the time to place your order for CPT-92 which will have the latest revised codes, especially the new Evaluation and Management codes required for use by Medicare effective 1/1/92. For prices and information, call AMA Customer Services at (312) 464-0183 or write: American Medical Association, 515 N. State Street, Chicago, IL 60610, Attention: Order Inquiry.

To order by credit card, call toll free 1-800-621-8335. ❒

CAPSULES

Roy A. Howell, Jr., MD, FACP, has received the 1991 Laureate Award of the South Carolina Chapter of the American College of Physicians.

The award was presented to Dr. Howell in honor of his high standards, clinical excellence, teaching skills, organization accomplishments, and unswerving support of the American College of Physicians.

Dr. Howell is in the private practice of internal medicine in Bennettsville, SC. ❒

RISK MANAGEMENT TOOLS

Two helpful risk management tools for your practice are available through the SCMA Risk Management Program. A patient satisfaction questionnaire which your patients can complete and return to you can alert you to their concerns and help you resolve potential problems. A phone call record booklet is also available for you to keep in your pocket and use to record telephone conversations with patients when you are out of your office. Each page can quickly be affixed to the patient's record simply by moistening the back.

Contact Joy Drennen at SCMA Headquarters to order copies of the questionnaire and the booklet. ❒

MIT CLAIMS EXCEEDED FIVE MILLION LAST YEAR

For the fiscal year ending June 30, 1991, SCMA Members' Insurance Trust paid out $5,537,519 in claims. The MIT is a health insurance program owned and operated by the SCMA for the benefit of its members, their employees and dependents. The only requirement is that the physician be a member of the SCMA. The MIT offers a high, mid and low option plan, as well as a Medicare supplement. All insured members under age 70 are automatically covered with $10,000 life insurance.

If you have any questions, please call Geri Galloway, Linda Nelson or Cindy Osborn at 798-6207 in Columbia, 1-800-327-1021 outside Columbia. ❒

TRAUMATIC DIAPHRAGMATIC DISRUPTION: A FIVE-YEAR EXPERIENCE AT SPARTANBURG REGIONAL MEDICAL CENTER*

JEFFREY E. LANFORD, M.D.**
MARK E. CHARIKER, M.D.
EUTA M. COLVIN, M.D.

Sennertus reported the first cases of diaphragmatic perforation in 1541. In 1579 Pare' reported two cases involving stomach and colonic transthoracic herniation. In 1886 Riolfi performed the first successful repair of a diaphragmatic laceration. Diaphragmatic disruption occurs in approximately three to four percent of all trauma admissions.[1-4, 8] The purpose of this paper is to review the clinical experience with diaphragmatic disruption treated at the Spartanburg Regional Medical Center during the period of 1983 to 1988.

During a five-year period, 1800 trauma victims were treated at Spartanburg Regional Medical Center. This population included the full spectrum of trauma. Eighteen patients with diaphragmatic disruption were diagnosed in this population acutely. Eleven of the cases were secondary to blunt trauma, and seven were secondary to penetrating trauma. The left hemidiaphragm was injured in 14 (78%) instances and the right hemidiaphragm was involved in four (22%). The diagnosis of diaphragmatic injury was made by preoperative chest roentgenogram in ten (55%) cases and by laparotomy in the remaining cases. One patient with blunt trauma had an unremarkable chest roentgenogram but a grossly positive peritoneal lavage and the diaphragmatic injury was discovered at surgery. One death occurred from massive bleeding secondary to a crush injury to the pelvis.

MATERIAL

During a five-year period, 1983-1988, 1800 trauma patients were treated at Spartanburg Regional Medical Center. Eighteen diaphragmatic disruptions were diagnosed acutely. Blunt trauma accounted for 11 (61%) of the injuries, and seven (39%) were secondary to penetrating trauma. The left hemidiaphragm was injured in 14 (78%) patients, and the right hemidiaphragm in four (22%) (Table 1).

The diagnosis of diaphragmatic injury was made at laparotomy for the seven cases of penetrating trauma and one blunt trauma case. The chest x-ray was the most useful ancillary study we obtained, helping to make the diagnosis of diaphragmatic disruption in the remaining ten cases. The findings on x-ray with a left hemidiaphragm injury included a stomach bubble in the left chest. Obliteration of the hemidiaphragm on chest x-ray was observed in the remaining cases.

Surgical exploration was performed through a midline incision. In two cases a thoracic approach was indicated for right diaphragmatic injuries. Associated injuries were found in all instances (Table 2). In our series, all but one of the diaphragmatic injuries were closed with running or interrupted zero Prolene suture. A running zero Vicryl suture was used in one case. One death occurred and was a result of massive bleeding secondary to a crush injury to the pelvis.

DISCUSSION

Diaphragmatic injuries occur in approximately three to four percent of all trauma admissions.[5] A large percentage of these cases can be attributed to automobile accidents.[6]

The mechanism of injury for diaphragmatic rupture is not fully understood. One theory that is proposed involves the sudden increase in the peritoneal-to-pleural pressure gradients. The embryologically weak posteriolateral aspect of the left hemidiaphragm results in this structure being more prone to injury.[6, 7, 8]

---

*From the Department of Surgical Education, Spartanburg Regional Medical Center, Spartanburg, S.C.

**Address correspondence to Dr. Lanford at the Department of Surgical Education, Spartanburg Regional Medical Center, 101 East Wood Street, Spartanburg, S.C. 29303.

TABLE 1

Type of Injury and Location

Type of Injury	*Diaphragm*	*Location*
1. MVA-auto	Left	Radial
2. GSW	Left	Central tendon
3. MVA-auto	Left	Radial
4. GSW	Right	Radial
5. Crush Injury	Right	Radial
6. MVA-auto	Left	Radial
7. GSW	Right	Radial
8. GSW	Left	Radial
9. MVA-auto	Left	Radial
10. GSW	Left	Radial
11. GSW	Right	Radial
12. Stab-knife	Left	Radial
13. Crush Injury	Left	Radial
14. MVA-auto	Left	Radial
15. MVA-auto	Left	Radial
16. MVA-auto vs. ped.	Left	Posterior/lateral
17. MVA-auto	Left	Radial
18. MVA-auto	Left	Radial

TABLE 2

Associated Injuries

Penetrating Injuries	
Laceration of the Liver	5
Stomach Injury	2
Laceration of the Hepatic Artery	1
Blunt Injuries	
Ruptured Spleen	7
Extremity Fractures	6
Hip/Pelvic Fractures	4
Facial Lacerations	3
Rib Fractures	2
Devitalized Transverse Colon	1
Ruptured Bladder	1
Renal Contusion	1

Diaphragmatic disruptions vary greatly in their severity and may present with a range of minimal symptoms or may pose life-threatening problems. Physical examination often reveals decreased or absent breath sounds on the injured side or one may auscultate bowel sounds in the chest.

Diagnosis of disruption of the diaphragm requires a high index of suspicion. The physical examination may not be a reliable guide because of associated injuries. The chest x-ray may be helpful when there is a gas bubble in the chest, multiple rib fractures or a right-sided diaphragmatic eventration.

In some cases, the diagnosis of diaphragmatic disruption is not made until an exploratory laparotomy is performed for other injuries. The diaphragm injury may not reveal itself for some time following the injury. One should strongly consider the possibility of diaphragmatic disruption in all cases of severe thoracoabdominal trauma.

Repair of a disrupted diaphragm should be performed immediately. A midline incision is the best incision to repair these injuries. This incision allows rapid exposure for the control of bleeding and the repair of associated injured viscera. The thoracic approach should be considered in patients with right-sided diaphragmatic disruptions. Non-absorbable suture should be used for the repair of all diaphragm injuries.

SUMMARY

Diagnosing diaphragmatic disruption requires a high level of suspicion. Diaphragmatic disruption must be considered in all cases of severe thoracoabdominal trauma. Initial chest x-rays can provide much useful information. Pathognomonic signs of diaphragmatic disruption on chest x-ray are stomach gas bubble in the chest, contrast material in the chest after its introduction into the upper gastrointestinal tract, and a nasogastric tube positioned above the diaphragm. In some cases a diaphragmatic disruption may not be diagnosed until exploratory laparotomy is done for associated injuries. One must carefully inspect both hemidiaphragms at the time of surgery, especially in injuries associated with penetrating trauma. Repair of the disruption should be undertaken at the time of diagnosis. The repair should be approached through a midline abdominal incision. A chest incision should be considered in cases of right-sided diaphragmatic disruption, or to assist with the delivery of contents back into the abdomen. Non-absorbable suture is recommended for all repairs of diaphragmatic disruption. □

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Staff Management Brief

Employee Turnover Costs

Do you know what it really costs to replace a departing employee?

Replacement costs typically exceed $1,000 for hourly employees in the service sector. Salaried employees cost up to $5,000 to replace. These costs, summarized from a survey reported in *Human Resources Management*, include advertising, interviewing, and employment service fees, in addition to your time.

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The **1989 National Defense Authorization Act** required that the Department of Defense conduct a test to determine the effectiveness of a recruitment bonus to attract health care professionals to the Selective Reserve of the Army. The 1991 National Defense Authorization Act directed that the test continue.

The Bonus Test Program is offered to physicians in the following specialties:

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ORTHOPAEDIC SURGERY
and
GENERAL SURGERY
(Including selected subspecialties)

Applicants must be board certified or meet all requirements for board candidacy in one of the above specialties.

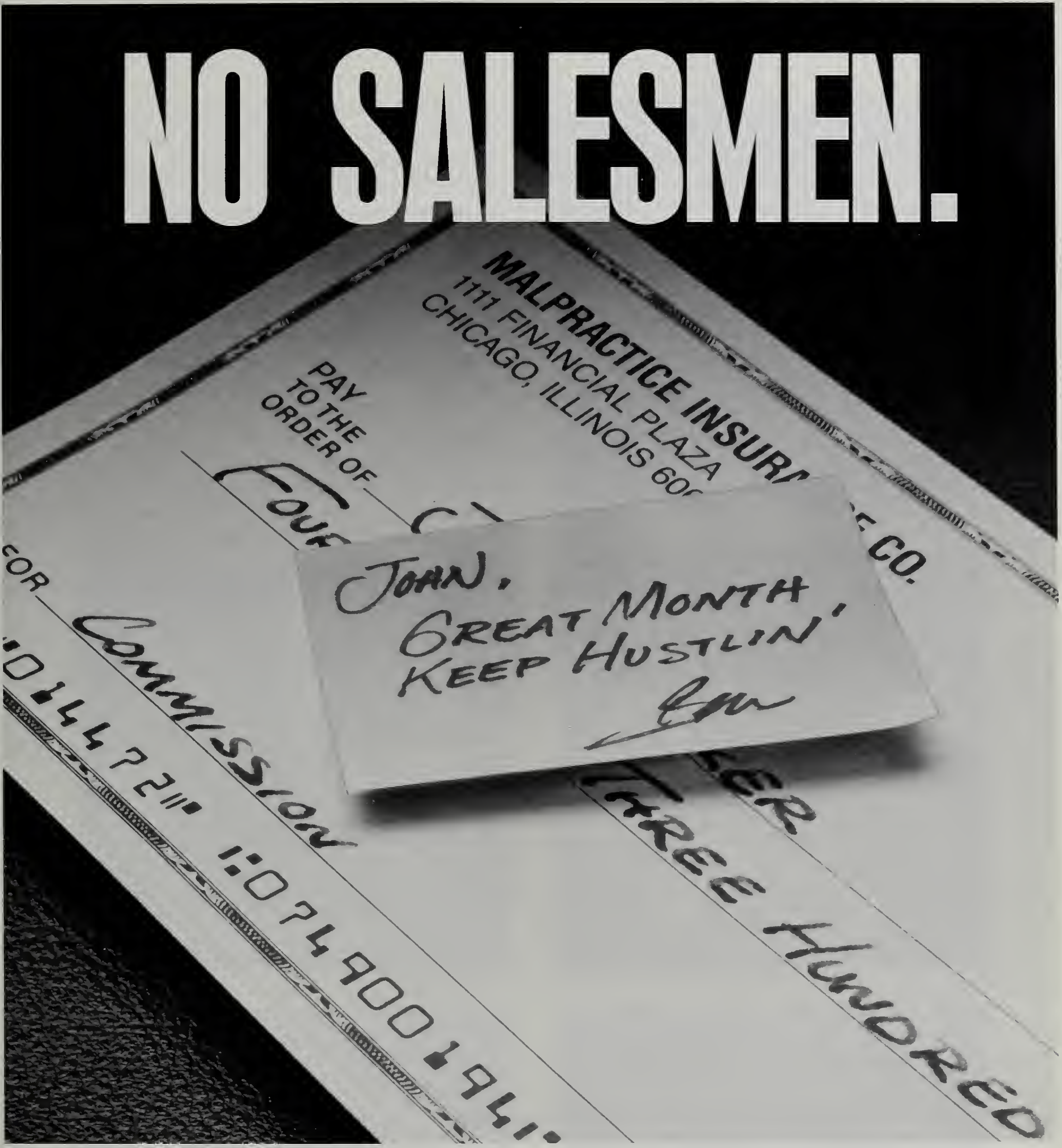
BONUS ELIGIBILITY: In addition to meeting all criteria for appointment as a medical corps officer in the US Army Reserve, Bonus Test applicants must be civilians and if prior service, discharged before 28 April 1989.

BONUS AMOUNTS: The test offers $10,000 bonus for each year of affiliation with the Selected Reserve of the Army, up to a maximum of 3 years. Physicians must choose 1, 2, or 3 years of affiliation at time of application. Bonuses will be paid annually at the beginning of each year of agreed affiliation.

TEST PARAMETERS: The design of the test stipulates that bonuses be offered in certain geographic areas. To qualify, applicants must reside within those areas at the time of accession.

TO FULLY DETERMINE YOUR ELIGIBILITY FOR THIS PROGRAM PLEASE CONTACT:

U.S. ARMY RESERVE HEALTH CARE TEAM
Strom Thurmond Fed. Bldg., 1835 Assembly St., Rm 575, Columbia, SC 29201
OR CALL COLLECT: (803) 765-5696



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Editorials

SINUSITIS: MORE THAN A HEADACHE

In this issue of *The Journal*, Dr. Juan A. Brown of Anderson describes the value of nasal endoscopic sinus surgery in patients who present with headache and who have evidence of sinusitis by computed tomography (CT) scans. Five months ago, Dr. Stephen Imbeau and colleagues from Florence also described the value of nasal endoscopy.[1] Similar articles have appeared in other state medical journals.[2-3] Why the flurry of enthusiasm? What's happenin'?

Sinusitis is of course extremely common and—fortunately—serious complications of the disease are rare, at least in community practice. Most patients respond to empiric therapy. However, there seem to me to be at least three important issues at this time.

First, what constitutes optimum "routine" management? In aggregate, the economic implications are staggering. Second, how can the rare, life-threatening complications best be recognized in a timely manner? Finally, when, how, and by whom should the newer techniques—such as CT scans, MRI scans, and endoscopic surgery—be utilized? The following comments are written from a non-otolaryngologist's perspective; I would welcome letters-to-the-editor from those working in this area.

Recognition of sinusitis

What is called "sinusitis" in clinical practice frequently isn't. On the other hand, as Dr. Brown and others have emphasized, significant sinus disease often goes unrecognized. Unfortunately, physical examination (at least by the generalist) seldom helps. Plain "sinus films" have limited sensitivity. CT scanning has become the procedure of choice.[4] For screening purposes, a "limited CT scan," as shown in the Figure, seems to be the procedure of choice (Figure). At least some radiology groups now offer such limited scans at a scaled-down price (e.g., under $50)—making it affordable for most patients. In my opinion, obtaining a CT Scan is preferable to trying one antibiotic after another for presumptive "sinusitis." Obviously, magnetic resonance (MRI) imaging gives a better picture—but is probably unnecessary in most patients.

Pathophysiology

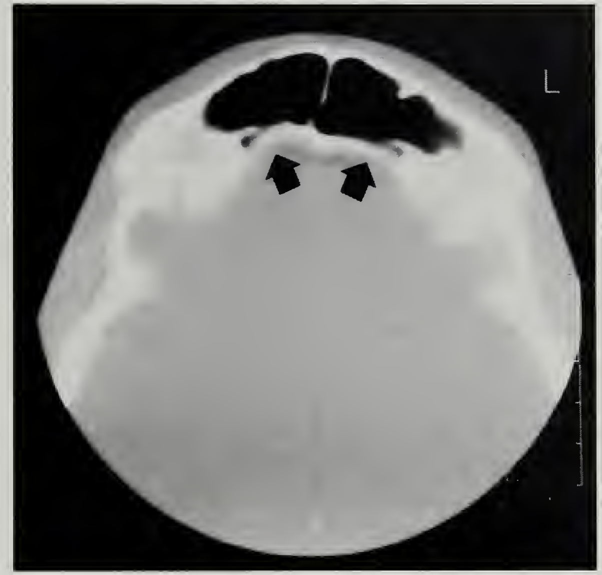
As Dr. Imbeau and colleagues pointed out in the May issue, there has been a "quiet revolution in medical thought" with respect to pathogenesis. We have long recognized the sequence: inflammation of the nasal mucosa —> occlusion of sinus ostia—> obstruction of mucous outflow—> acute sinusitis. However, we previously taught that most acute sinusitis was "maxillary sinusitis," and that involvement of the other sinuses was relatively uncommon. We now recognize that the sinuses converge at the level of the anterior ethmoids, so that involvement of the "ostiomeatal complex" is rarely limited to a single sinus.[5] Failure of first-line therapy (antibiotics and decongestants) suggests the need for further evaluation, especially since chronic sinusitis—as opposed to acute sinusitis—can be difficult to recognize on clinical grounds.

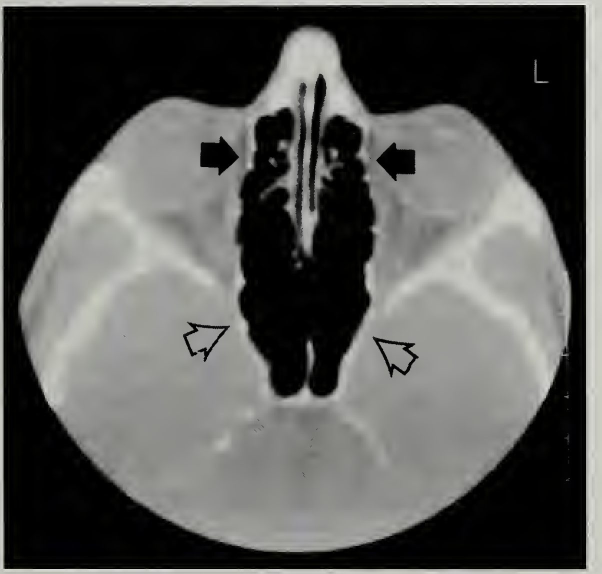
Microbiology

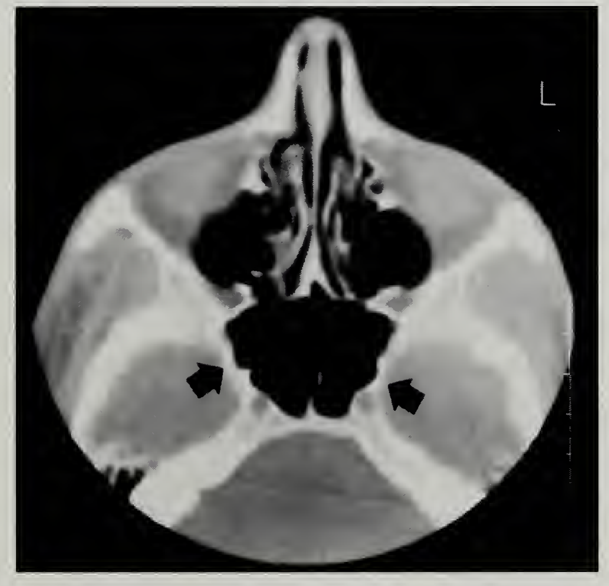
Studies based on antral puncture have established that sinusitis—at least maxillary sinusitis—evolves in three stages: (1) initial invasion by respiratory viruses; (2) secondary invasion by virulent bacteria (such as *S. pneumoniae, H. influenzae*, and *Branhamella catarrhalis*); and finally (3) tertiary invasion by opportunistic microorganisms including anaerobic bacteria and fungi. Recently, there has been concern that *H. influenzae* and *Branhamella catarrhalis* often produce beta-lactamase enzymes, which can inactivate such antibiotics as penicillin V and amoxicillin.[6] Beta-lactamase-producing microorganisms can "protect" penicillin-susceptible pathogens, further complicating antibiotic therapy.[7]

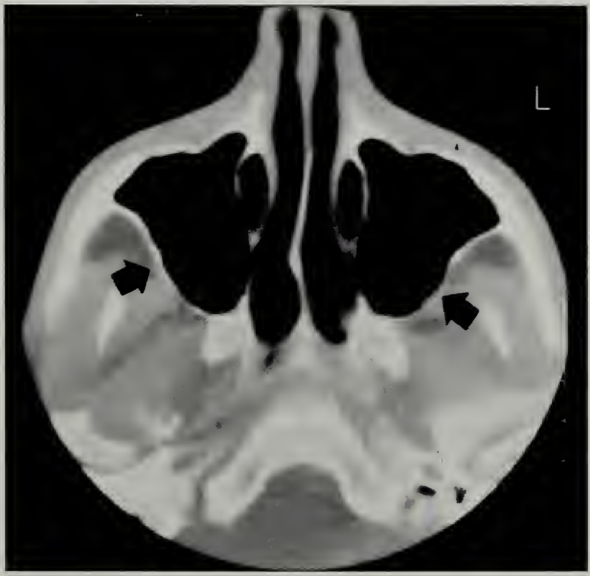
Branhamella catarrhalis merits special

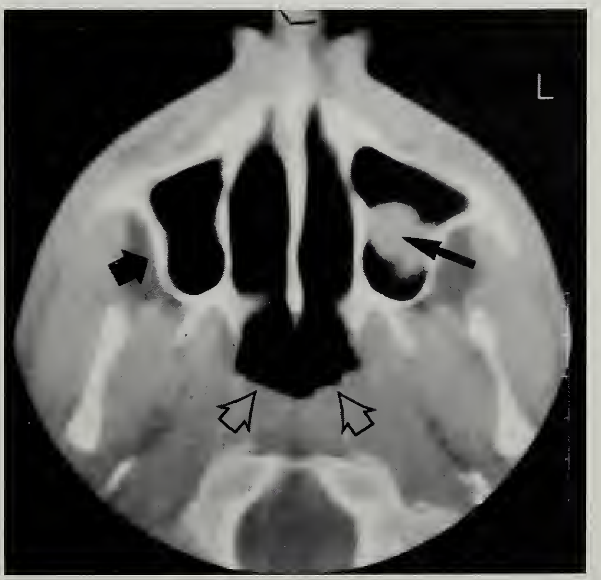
VIEWS OF PARANASAL SINUSES ON FIVE SELECTED AXIAL COMPUTED TOMOGRAPHY (CT) SCANS. ***Top right*****: frontal sinuses (arrows).** ***Below left*****: ethmoid sinuses (bold arrows) and sphenoid sinuses (open arrows).** ***Below right:*** **sphenoid sinuses (bold arrows).** ***Bottom left*****: maxillary sinuses (arrows).** ***Bottom right*****: maxillary sinuses (bold arrows; the longer arrow points to a mucocele or polyp) and nasopharynx (open arrows).**











emphasis. This organism, previously known as *Neisseria catarrhalis*, was once thought to be a harmless denizen of the pharyngeal mucosa. We now know that it has a number of virulence factors and has become the third most common cause of acute otitis media and acute sinusitis in pediatrics practice. Worldwide, 75 percent of strains are now beta-lactamase-producing.[8] It is doubtful that accurate etiologic diagnosis is often obtained in clinical practice, due to the difficulty of obtaining a valid specimen for culture. Since the implications of beta-lactamase-producing organisms are great, a simple and convenient test would be most welcome.

Complications

When symptoms of acute sinusitis fail to resolve despite appropriate therapy, leading to the diagnosis of chronic sinusitis, there is "no evidence that it is primarily an infectious problem."[9] Surgical re-establishment of drainage is the key to successful therapy, and no attempt will be made here to review the various techniques. All physicians, though, should be aware of such complications as:

* *orbital cellulitis* (especially from ethmoid sinusitis)
* *subdural empyema or frontal lobe abscess* (from frontal sinusitis)
* *cavernous sinus thrombosis* (especially from frontal or sphenoid sinusitis)

The syndromes of acute sphenoid sinusitis and invasive fungal sinusitis warrant special discussion.

Acute sphenoid sinusitis

Isolated acute disease of the sphenoid sinuses is rare but life-threatening. It is curable if promptly diagnosed. This syndrome is one of the infectious causes of "the worst headache ever" (others include meningitis and Rocky Mountain spotted fever).[10] In a retrospective series of 15 patients, all of the six patients who were promptly diagnosed and given high-dose intravenous antibiotics survived without sequelae. However, all nine patients whose diagnoses were delayed either died or had serious complications.[11]

Careful attention to the sphenoid sinuses on CT scan is the key to early diagnosis of this life-threatening syndrome (Figure). The classic vertex headache is actually uncommon. More commonly, the pain is frontal, temporal, or retroorbital; it may radiate to the occiput; and pain in the distribution of the trigeminal nerve (V_1 to V_3) is common. Complications of sphenoid sinusitis include cavernous sinus thrombosis, meningitis, hemiparesis, cortical vein thrombosis, and orbital cellulitis.

Fungal sinusitis

Fungal disease sinusitis seems to be increasing, for reasons not entirely clear. The spectrum includes (1) simple colonization of the sinuses with fungi in the course of chronic sinusitis; (2) allergic fungal disease; (3) fungus balls as best-exemplified by the "aspergilloma;" and (4) invasive disease which may extend through brain and then into the central nervous system.[12] The syndrome of rhinocerebral mucormycosis in patients with diabetes mellitus is the best-known example of the sinuses providing fungi with "way stations to the brain." Recently, however, disastrous complications of fungal disease are being recognized in nonimmunocompromised patients.

In South Carolina as elsewhere, patients have been recognized who—without any known predisposing cause—developed invasive fungal sinusitis with brain or orbital involvement. The causative fungi are often dematiaceous molds—fungi with pigment in their walls which are often found as soil contaiminants, with names such as *Curvularia*, *Bipolaris (Dreschlera)*, and *Exersohilum*. When such organisms are recognized in biopsy or tissue specimens, it is necessary to determine whether or not mucosal invasion is actually present. If this is the case, then surgical excision of all diseased treatment combined with intravenous amphotericin B is strongly recommended.[13-14]

Special populations

Although acute sinusitis seems to occur without rhyme or reason, certain populations should be watched for the possibility of increased frequency and/or severity. In patients who have recently recovered from diabetic ketoacidosis, any evidence of nasal or sinus symptomatology should be taken seriously as the first clue to rhinocerebral mucormycosis. In patients who have been intubated or who have nasogastric tubes, sinusitis should be suspected—it is a cause of fever of unknown origin and may be due to gram-negative rods.[15] Older patients may have increased morbidity and mortality from sinusitis; hence, again the need for heightened awareness and CT scans when indicated.[16] Sinusitis may also be more common in HIV-infected patients (19.1% in one recent series).[17]

Summary

To conclude, the paper by Brown in this issue illustrates the value of considering sinusitis as a cause of refractory headache but more importantly illustrates the value of new approaches to diagnosis and management of this frustrating condition. We must be cautious to avoid overutilization of these techniques; in all likelihood only a small percentage of patients have "true sinus headaches."[18] However, we should be liberal about using new imaging techniques (notably, CT scans) to determine which patients need thorough evaluation by an otolaryngologist. Although we have gained a great deal of information, one question still troubles me and remains largely unanswered. Why did the Good Lord see fit to give us sinuses in the first place?

—CSB

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Letter to the Editor

To the Editor:

Recently in the lay press, there has appeared a multitude of misleading and false information regarding implants for breast contouring and breast reconstruction. This has caused anxiety in many patients and is of great concern to us. The facts show that this anxiety is unwarranted.

The first controversy concerns implants covered with polyurethane, primarily used for breast reconstruction. In 1979 the FDA classified polyurethane implants as Class II (performance standard). In 1988 polyurethane implants were classified to Class III (premarket approval). The necessary studies have been done by the manufacturers. The FDA has conducted its own studies and will release those results possibly this summer. The chemical TDA (which is a potential breakdown product of polyurethane) has been shown to cause cancer in animals only in amounts much higher than would be received from breast implants. This was stated by Elizabeth Jacobson, Ph.D., Deputy Director of the FDA's Center for Device and Radiological Health. Department of Health and Welfare, Canada is advising women that the risk of cancer from polyurethane implants is so slight that it can be equated to having smoked one and a half cigarettes in a lifetime. These implants have been very important to our plastic surgery armamentarium because they have associated with them, the least capsules and the best long term results.

This second controversy concerns the concept that silicone implants may cause or exacerbate connective tissue disorders such as lupus and scleroderma. A recent report by Professor Rose from Johns Hopkins University concluded that there was no conclusive evidence at this time that the silicone from breast implants is related to the development of connective-tissue disease. Silicone is not an adjuvant but simply an inert substance that elicits a foreign body reaction.

Implants certainly have potential problems including capsule formation, foreign body reaction, and infection. Monitoring of other potential problems will be done vigorously. However, the recent publicity is unjustified and damaging to our patients. It is particularly disturbing that reports by Connie Chung and Geraldo on television resort to sensationalizing the issues without reporting the facts.

Sincerely,

RICHARD C. HAGERTY, M.D.
WARREN L. GOULD, M.D.
MUSC, Division of Plastic Surgery
171 Ashley Avenue
Charleston, S.C. 29425

Auxiliary Page

HEALTH PROJECTS—THE HEART OF AUXILIARY

From the mountains through the rolling hills to the coast, your 27 county auxiliaries remain committed to community service and to volunteerism in the realm of health promotion. We enthusiastically support those programs of the SCMA that improve the health and quality of life for all people. We promote health education, encourage participation of volunteers in activities that meet health needs and support health-related charitable endeavors.

From the American Medical Association and Auxiliary, emphasis continues to be on programs to address adolescent health issues, including HIV/AIDS, teen sexuality and pregnancy, and substance use and abuse; as well as prenatal and postnatal care; women's health; and environmental health issues. Work is beginning on a new initiative—educating the public about domestic violence. Most of our county and state health projects address these timely health issues.

There are several ongoing state health projects which your auxiliary supports. The HEALTH EDUCATION VAN is the most visible with its teacher training and student health education activities. We promote its use and continued expansion. The SCMA/SCBA SUBSTANCE ABUSE PROJECT is in its second year and auxiliaries are responding to assist. We also endorse the Parents' Resource Institute on Drug Education (PRIDE). The Board of Trustees recently approved two new projects. The "Teen Direct Line" will be a wallet-sized card containing state and national hotline numbers that teens would find helpful concerning such issues as alcohol and substance abuse, family violence, abuse and neglect, rape, suicide and other emergency numbers. The "Grow With Books" project in conjunction with the South Carolina State Library will promote literacy and health promotion from birth.

Louis Sullivan, M.D., Secretary of the Department of Health and Human Services, was the guest speaker at the opening meeting of the AMA Auxiliary in June. He shared the progress of HEALTHY PEOPLE 2000, a plan for health promotion/disease prevention which focuses on specific goals improving our health behaviors and lifestyles. We support this process as it is carried out in South Carolina. Dr. Sullivan challenged us to lead our country from a "culture of callousness" to a "culture of character." He shared a quote from a past mentor. "We make our living from what we get. We make our lives from what we give."

These are the highlights of your Auxiliary's 1991-92 Health Projects Committee activities. Each county is where the action takes place. It is there where each of us bears the responsibility for our behavior and choices, and each has a vital role in transforming ourselves, our families and communities. We anticipate the challenge and join our physician spouses in promoting the health and well-being of our state.

Mrs. Michael Sabback (Jeanne)
SCMA Auxiliary Health Projects Chairman

Mrs. Stephen Kroll (Joni)
SCMA Auxiliary Health Projects Co-Chairman

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President's Page

STEWARDSHIP—A MEDICAL PERSPECTIVE

Stewardship has a role beyond the church in the real world and even in medicine. In the world we are called to protect and preserve the environment, to think globally and act loyally. Our efforts to recycle or plant trees after a hurricane pale in comparison to the toxic waste of a large manufacturer or the destruction of the rain forests. However, our individual efforts are still important.

Doesn't stewardship also have a role in medicine? In Biblical times the steward directed the household and controlled expenses on behalf of his master. Our patients expect us to direct their care thoughtfully and to use resources appropriately. We order the diagnostic tests, prescribe the medications and treatment, and manage the hospitalization. Are physicians being good stewards? Just as in environmental issues, many times our individual efforts to control costs seem pointless in comparison to the high costs we cannot control, such as hospitalization, equipment, or expensive tests.

A few years ago when skin staplers first became routine for closure of surgical incisions, I asked for the least expensive brand. A nurse mentioned that another physician always asked for the most expensive one. That physician didn't think the quality was any better, but insisted that his patient was entitled to the "best." Staplers are a minor item until you consider the many operations performed in our state each year.

The laser has been advertised as an integral part of laparoscopic cholecystectomy. Despite the "hype" associated with the laser, studies indicate no advantage to the laser over electrocautery. The additional cost of the laser is significant.

All of us make better decisions in our area of expertise. I don't treat patients for elevated cholesterol but I frequently advise them to consult their regular physician. In my experience the main group of patients who want their cholesterol checked regularly are the elderly. I have never been sure of the proper role of cholesterol management in this group. A recent article (Arch Intern Med 1991; 151:1089-1095) indicates that screening and treatment of cholesterol in asymptomatic patients over age 65 would add between $1.6 billion and $16.8 billion to our medical costs each year with *no* improvement in morbidity and mortality. Good stewardship in this instance involves education of the patient as to the appropriateness of cholesterol screening. Practice Parameters should allow conscientious physicians to be better stewards in the future.

Cost is the main problem fueling the debate in our healthcare system. It is increasingly important that we physicians are good stewards for our patients. They are entitled to good care, perhaps the best care, but that does not necessarily mean the most expensive care. We must be patient advocates, but we also need to consider cost as we make therapeutic decisions. Those decisions are rarely black and white, and that's the challenge that faces all of us. Stewardship is good for the patient, good for our healthcare system, and an important part of being a good physician.

J Chris Hawk III MD

J. Chris Hawk, III, M.D.
President

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The Journal
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A REPORT ON DEMENTIA IN SOUTH CAROLINA, 1988-1990*

CAROLINE A. MACERA, Ph.D.**
DOROTHY R. DAVIS, B.A.
DEBRA A. BRANDES, B.A.
CHARLES N. STILL, M.D.

Population projections indicate that the over age 65 population in South Carolina is growing at a faster rate than the under age 65 population.[1] Nationally, reported mortality due to Alzheimer's disease has increased from 1,728 in 1979 to 26,325 in 1987.[2] Even though death certificate data are known to be poor sources for information on dementia,[3] previous studies have shown that the incidence of dementia increases exponentially with age.[4, 5] Furthermore, the prevalence of dementia doubles every 5.1 years,[6] and appears to be more of a problem among persons of low socioeconomic status.[7] There is also evidence that these figures significantly underestimate the actual numbers of persons affected.[8, 9] Although many persons with dementia are cared for at home, studies estimate that one-third to one-half of severely demented persons are institutionalized.[10] These factors indicate that we may be facing a major health problem within the next few decades, emphasizing the need for additional data to use in planning efforts.

The Statewide Alzheimer's Disease and Related Disorders Registry was established in 1988 and authorized by state law in 1990 to obtain information on the occurrence of dementia, particularly Alzheimer's disease, among residents of South Carolina.[11] This report covers the period 1988 to 1990 and summarizes data on individuals with a diagnosis of dementia during this period.

METHODS

For the purposes of the registry, a "case" is defined as an individual who, as of or after January 1, 1988, had a recorded diagnosis of dementia.[12] Four major categories, specified by the International Classification of Disease, 9th revision, Clinical Modification codes[13] used by the registry, are: (1) AD; Alzheimer's disease, senile or presenile dementia; (2) MID; multi-infarct dementia; (3) ALC; alcohol or drug-induced dementia; and (4) MED; medical diagnoses with dementia (Table 1). The registry staff abstracts information from the medical record and does not verify diagnoses or interview the individual case.

Cases are identified in several ways: (1) from patient lists received regularly from the Department of Mental Health; (2) from individuals attending Alzheimer's disease support

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*From the Statewide Alzheimer's Disease and Related Disorders Registry, Department of Epidemiology and Biostatistics, School of Public Health, University of South Carolina, Columbia (Dr. Macera, Ms. Davis, and Ms. Brandes) and the Department of Neuropsychiatry and Behavioral Science, University of South Carolina School of Medicine, Columbia (Dr. Still).

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TABLE 1.
CLASSIFICATION OF DEMENTING ILLNESSES BY ICD-9-CM CODES

Category	ICD-9-CM Code(s)	ICD-9-CM Rubric
AD	331.0	Alzheimer's disease
	290.0-290.3	Senile or presenile dementia
	290.8-290.9	Other senile psychotic condition
MID	290.4-290.43	Arteriosclerotic dementia
ALC	291.2	Other alcoholic dementia
	292.82	Drug-induced dementia
MED	294.0-294.9	Organic psychotic conditions
	332.0-332.1	Parkinson's disease
	333.4	Huntington's chorea

AD: Alzheimer's disease or senile or presenile dementia
MID: Multi-infarct dementia
ALC: Alcoholic dementia or drug-induced dementia
MED: Medical diagnosis with dementia

groups; (3) from patients being evaluated by Community Long Term Care; and (4) from individual residents of nursing homes throughout the state. Consent is obtained before abstracting data from the medical record. The abstract form contains caregiver/contact data to be used for annual follow-up, as well as diagnostic information on dementia and other diseases, a family history of dementia, and the diagnostic tests administered.

Abstract forms are received daily in the registry office. Quality control is assured in a number of ways. Each form is checked against the master registry list for duplicates before being assigned a unique identifier. The registry computer system is a dBase III program, using the Clipper compiler, with built-in data entry and editing features. After data entry, forms are proof-read for accuracy by a second person. A manual describing the criteria for abstracting records is updated regularly. Frequent re-training sessions are held to ensure consistency in abstracting data from the medical record and in adhering to the criteria. Approximately five percent of the records are selected to be abstracted again and compared to the original record. Problems identified in this way are corrected during the re-training sessions.

Registry data are transferred to the mainframe, without identifiers, for analysis using SAS.[14] Statistically significant differences between groups are evaluated by chi-square tests for categorical variables and t-tests for continuous variables using a p-value of <0.05.

RESULTS

Of the 4,283 cases who met the inclusion criteria during the period 1988-1990, 2,625 or 61 percent carried a diagnosis of Alzheimer's disease, presenile or senile dementia. As shown in Table 2, the distribution by age, race, sex, education, and marital status varied by type of dementia, with more women in the AD category and more men in the ALC category. As expected, the current age distribution was higher among those with AD and MID as compared to those with other types of dementia. Occupational subgroups were similar for all types of dementia.

The prevalent cases of Alzheimer's disease (including senile and presenile dementia) recorded by the registry increased from 1,521 for 1988 to 2,518 for 1990. In spite of the 66 percent increase in the number of cases between 1988 and 1990, the percent distribution for the demographic categories of sex, race, age, and education remained relatively con-

TABLE 2.

DEMOGRAPHIC CHARACTERISTICS OF DEMENTIA CASES BY DEMENTIA TYPE, SOUTH CAROLINA, 1988-1990 PERCENTAGES

Characteristic		AD n=2,625	MID n=509	ALC n=468	MED n=681	TOTAL n=4,283
Sex:	Men	33	54	80	58	45
	Women	67	46	20	42	55
Race:	Black	42	50	59	44	45
	White	58	50	41	56	55
Current age:	<65	7	17	60	53	21
	65-79	41	48	34	33	40
	80-84	25	18	5	9	19
	85-89	16	11	2	4	12
	90+	10	7	0	2	7
Education:	Less than HS	53	50	55	38	50
	HS or more	33	30	38	44	35
	Unknown	14	20	7	18	15
Marital status:	Married	29	31	19	29	28
	Wid/Div/Sep	61	58	52	41	57
	Single	10	11	29	30	15
Occupation:	Domestic	26	24	20	20	24
	Agriculture	8	10	6	8	8
	Textile	16	16	15	9	14
	Construction	4	5	11	7	5
	Gov/Sales	20	16	18	19	19
	Never	2	2	3	7	3
	Unknown	25	28	28	30	27

stant (Table 3). Three-quarters of the cases were women, almost 60 percent were white, and about 10 percent were currently age 90 or older.

When the registry cases were categorized by whether or not the case was currently residing in an institution, the percentages remained similar across the three-year period. However, those cases residing in the community were substantially different from those residing in institutions (Table 4). A higher percentage of women, whites, unmarried persons, and older persons were found in institutions. Data on educational achievement were not available for 22 percent of the community cases compared to nine percent of the institutionalized cases. Of those on whom we have data, the community cases appear to be less educated than those in institutions (69 percent with less than high school in community cases compared to 58 percent in institutions). This difference could possibly be resolved if information on education was available for everyone.

The time from onset of symptoms to diagnosis was about five years for both groups of AD cases. This did not vary between those in institutions or those in the community, but accurate data for onset of symptoms were only available for approximately half the cases.

DISCUSSION

These data are consistent with reports from other registries that find approximately 60 to

TABLE 3.

DEMOGRAPHIC CHARACTERISTICS OF PREVALENT ALZHEIMER'S CASES, SOUTH CAROLINA, 1988-1990 PERCENTAGES

Characteristic		1988 n=1,521	1989 n=2,053	1990 n=2,518
Sex:	Men	32	33	33
	Women	68	67	67
Race:	Black	46	44	42
	White	54	56	58
Current age:	<65	8	8	7
	65-79	42	41	42
	80-84	25	25	25
	85-89	17	16	16
	90+	9	10	10
Education:	Less than HS	56	55	53
	HS or more	32	32	33
	Unknown	12	13	14
Marital status:	Married	29	29	29
	Wid/Div/Sep	61	60	61
	Single	11	10	10

75 percent of those with dementia to be diagnosed with Alzheimer's disease or senile dementia. Our figures indicate that 61 percent of the total registry cases carry an AD diagnosis. If we had included MID in the AD category, the percentage would have increased to 73 percent. With respect to sex and age, our registry appears to have demographic characteristics similar to registries in other states. The South Carolina registry varies, however, in the proportion of blacks that are recorded; although the population of South Carolina is only about 30 percent black, 42 percent of the AD cases recorded in the registry are black. This discrepancy becomes even larger for community cases where 53 percent of the AD cases are black.

Case ascertainment, of course, cannot be evaluated since there is no known method of identifying those diagnosed with dementia, nor any generally agreed upon set of criteria for the differential diagnosis of Alzheimer's disease. This issue is a problem that will not be resolved in the near future. Over time, the registry may be able to conduct an extensive survey of a defined geographic area and compare the true prevalent cases with the registry estimates. Until then, we should assume that the cases we obtain are the most severe cases and thus responsible for the majority of the service needs. Knowing more about these dementia cases and the course of their disease should assist agencies in their planning efforts. Studies using registry data to search for risk factors for dementia, however, will have to wait until better methods of identifying cases, particularly incident cases, become available. Meanwhile, the registry database is not only a vital first step in assessing the growing problem of dementia in South Carolina, but also a valuable resource for future planning.

SUMMARY

With the over age 65 population growing at a faster rate than the under 65 population, and with the strong effect of age on the incidence and prevalence of dementia, South Carolina faces a major health problem among its elderly residents by the year 2010. This report summarizes data on the 4,283 persons identified by the Statewide Alzheimer's Disease and Related Disorders Registry during the period 1988 to 1990. Sixty-one percent of these cases had a diagnosis of Alzheimer's disease or senile dementia and 62 percent of these were currently institutionalized. The demographic distribution of the AD cases did not change over the three-year period. Compared to community cases, those in institutions were generally older, and more likely to be women, unmarried, and white. The average time from onset of symptoms to diagnosis of AD was about five years. ☐

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TABLE 4.

DEMOGRAPHIC CHARACTERISTICS OF PREVALENT ALZHEIMER'S CASES BY INSTITUTION AND COMMUNITY, SOUTH CAROLINA, 1990 PERCENTAGES

Characteristic		Institution n=1,571		Community n=947		Total n=2,518	
Sex:	Men	30		37		33	
	Women	70		63		67	
Race:	Black	36		53		42	
	White	64		47		58	
Current age:	<65	4		13		7	
	65-79	38		48		42	
	80-84	27		21		25	
	85-89	19		13		16	
	90+	13		5		10	
Education:	Less than HS	52	(58)	54	(69)	53	(61)
	HS or more	38	(42)	25	(31)	33	(39)
	Unknown	9		22		14	
Marital status:	Married	23		40		29	
	Wid/Div/Sep	66		52		61	
	Single	11		8		10	

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CYTOTECHNOLOGY MANPOWER ASSESSMENT*

E. BLAIR HOLLADAY, Ph.D., CT(ASCP)**

The shortage of cytotechnologists in the United States has now reached 27.8 percent and is expected to continue to increase. The primary purpose of this survey was to assess the number of vacant positions in SC, interface with laboratory managers, and to propose short and long term solutions to the problem.

MATERIALS AND METHODS

A 14-item questionnaire was sent to 97 hospitals, private laboratories, and physician office laboratories in South Carolina. Twenty-seven surveys were returned; however, this return rate most likely reflects the total number of institutions practicing cytology out of the total clinical sites in South Carolina. The survey included questions in the following categories:

1. number of full-time cytotechnologists
2. number of part-time cytotechnologists
3. the number of positions filled in the last five years
4. current availability of cytotechnologists
5. length of period a position has been open
6. future projections for number of cytotechnologists needed in the laboratory
7. number of Gyn and Non-Gyn specimens
8. most effective means of advertising
9. recruiting processes
10. negative recruiting factors
11. starting salary of cytotechnologists
12. interest in a clinical affiliation with the cytotechnology program

RESULTS

The types of cytology laboratories which currently review cytological specimens were: Eighty-five percent hospital based and 15 percent private laboratories. Respondents were asked to indicate the number of full-time cytotechnologists currently working in their laboratory. Forty-eight percent of the labs employ only one cytotechnologist while 52 percent employ more than one.

Forty-three percent of the laboratories polled indicated that they currently had open positions (Figure 1), with 71 of these positions having been open for three or more months (Figure 2). Within the next six months, 52 percent of the labs in the state indicated that they will be looking for a cytotechnologist (Figure 3).

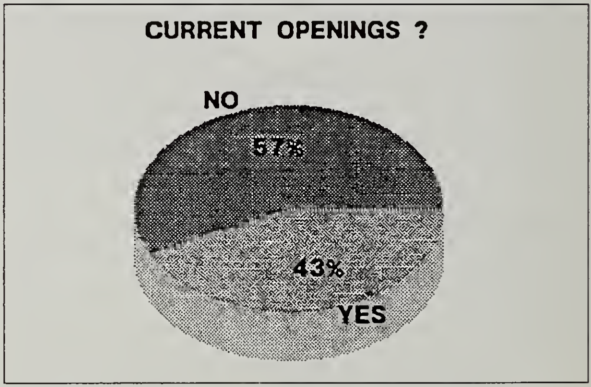

FIGURE 1

The survey indicated that 50 percent of the labs in South Carolina screen 10,000 or less gynecological specimens per year and 55 percent indicated they screen 1,000 or less non-gynecological specimens per year.

As for recruiting, word of mouth was noted as the most effective means of advertising; furthermore, contact with students in cytotechnology programs was the second most effective means (Figure 4).

Fifty percent of the laboratories indicated that cytotechnologists are too few, and too

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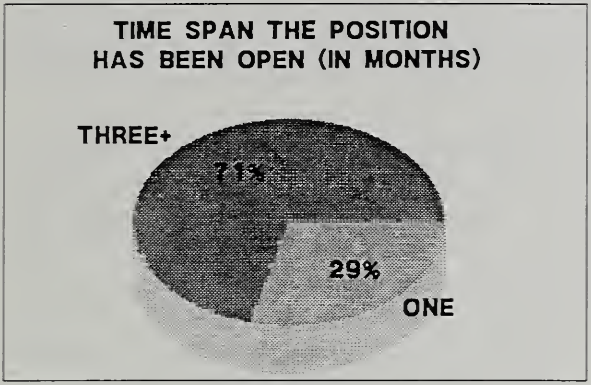

FIGURE 2

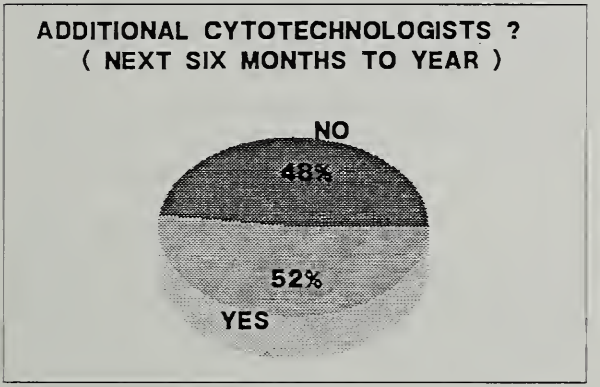

FIGURE 3

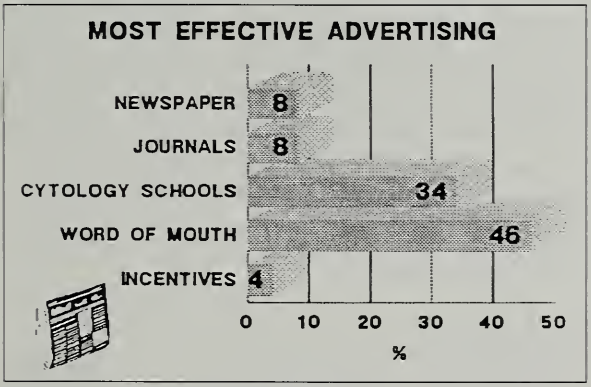

FIGURE 4

hard to find. Another 17 percent of the laboratory managers indicated that they look out of state to fill vacant cytotechnology positions.

Only 13 percent of the labs returning the survey felt that the lower salaries had a negative impact while 27 percent reported that fewer benefits were negative factors. An equal percentage reported that lack of retraining time for cytotechnologists who have been out of the field for awhile had a negative impact on recruitment of these possible candidates for employment. The greatest negative factor was that fewer monetary incentives were offered by their lab in comparison to other labs (Figure 5).

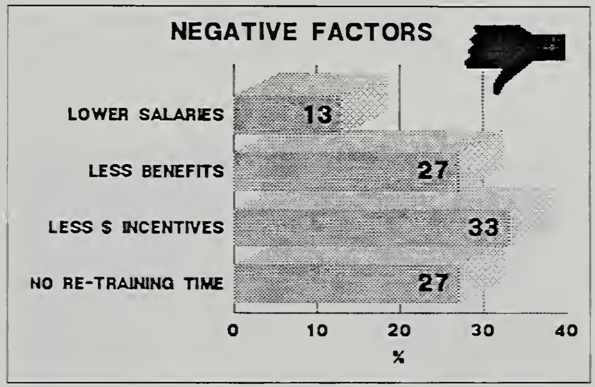

FIGURE 5

The respondents were questioned regarding the starting salary for recent cytotechnology graduates without experience. Forty percent of the laboratories indicated they pay between $25,000-$29,000. Another 40 percent pay between $23,000-$25,000, while 20 percent pay between $19,000-$23,000 (Figure 6).

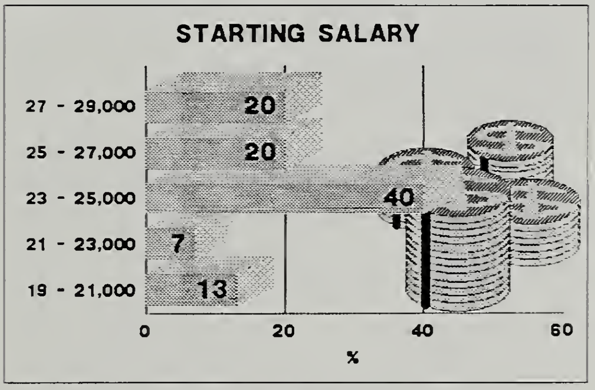

FIGURE 6

Supervisors were also asked to indicate their interest in serving as a clinical site for the clinical component of the cytotechnology curriculum. Fifty percent of the laboratories indicated they were interested and another 40 percent stated they were not sure but would like more information.

CONCLUSIONS

The shortages of cytotechnologists in the state of South Carolina have reached enormous proportions; therefore, it is important to consider mechanisms in which this problem can possibly be resolved. The faculty housed in the Department of Medical Laboratory Sciences at the Medical University of South Carolina has put together a proposed package in order to help alleviate these vacancies. First of all, the number of students educated in cytology at the Medical University of South Carolina was increased from six to 12 in the 1991-1992 academic year. This is possible through the recent funding of a second faculty position. Secondly, in the future, preference will be given to in-state students. This should help in the attrition of students leaving the state due to a permanent residence elsewhere. Scholarships are an excellent form of allowing the student the privilege of tuition-free education; furthermore, many times these scholarships are linked to student employment in the state of South Carolina for a designated period of time after graduation. Currently, the South Carolina Pathology Society provides such a scholarship. In addition, the Department of Medical Laboratory Sciences has obtained six full-time scholarships to award to students provided that the students seek employment in the state after graduation. Other means of combating the shortages of cytotechnologists in the state might be seen through our statewide recruiting efforts. At the present time, the cytotechnology program recruits at various universities (College of Charleston, Clemson, USC, Francis Marion) in the state to help increase the number of students applying for the program. By increasing the number of qualified applicants for admission, we are likely to choose only South Carolina candidates thereby increasing the chance of matriculation in the state after graduation from the program.

Lastly, it is important to point out that many laboratories could benefit in filling their vacancies by using monetary incentives. Monetary incentives can be given to the students in the form of a contract; that is, the employer can contract with the student for services rendered at a later date (i.e. after graduation). Many of our students choose this method of contract—a little up front money is an excellent way to guarantee that the position will be filled. Interestingly, those students who choose these contracts with South Carolina employers might even be rotated with that facility during their clinical experience; consequently, the student will become acclimated with that laboratory which may ultimately help the laboratory manager by saving the three to six-month time interval it takes for any new employee to learn the laboratory's individual system (break-in time). However, the student could not be a full-time employee until after graduation. For those laboratories which are not interested in contracting with students, they might consider being a clinical affiliate of the Cytotechnology Program. This clinical affiliation would allow the student to rotate in the facility. It is our experience at the Medical University of South Carolina that students who rotate in clinical facilities generally find these are the areas they would like to work, due to the fact that they are comfortable in the laboratory and are eliminating the uncertainty of signing on with a laboratory with which they are not familiar.

It is imperative that the laboratories which practice cytotechnology in the state of South Carolina work together in conjunction with the cytotechnology program to eliminate the increasing number of positions that cannot be filled. The Health Care Financing Administration regulations will only escalate the current shortage; therefore, all possible avenues which would terminate in rendering solutions must be explored.

SUMMARY

The shortages of cytotechnologists in the state of South Carolina are 43 percent, representing an extreme urgency to fill these vacant positions (national average 28 percent). Furthermore, the shortage is expected to rise (52 percent) thereby demanding a solution to the problem. ☐

VASCULAR MALFORMATION: CASE REPORT AND LITERATURE REVIEW*

DAVID A. WEATHERFORD, M.D.**
RANDEL S. ABRAMS, M.D.
JAMES G. WALLACE, M.D.

Congenital vascular malformations are anomalies resulting from the derangements in the normal development of the vascular system. A spectrum of abnormalities is possible, all exhibiting unique presentations but having similar developmental origins and treatment options. Important concepts in the treatment of the patient with a congenital vascular malformation include proper diagnosis and lesion definition, a conservative approach, and when treatment is necessary, a well-directed treatment regimen.

CASE REPORT

The patient originally presented with a localized cavernous hemangioma of the right thigh. Initial treatment consisted of radiation therapy followed by several debulking procedures. Over the next ten years the patient was observed and underwent treatment of flexure contractures of the affected extremity.

At approximately 12 years of age, the patient presented at our institution for evaluation and treatment recommendations as the size of his lesion was enlarging. The work-up included physical exam, laboratory evaluation, angiography, CT, and MRI.

The patient reported that the vascular lesion was progressively involving his right lower extremity, impairing his development, lifestyle, and mobility. He had no evidence of similar lesions elsewhere. Examination of the right lower extremity revealed enlargement of the thigh laterally and of the adjacent gluteus maximus muscle. Multiple, dilated blood vessels were noted. The extremity showed diffuse scarring from previous treatments, increased warmth, and a limited range of motion. The extremity was neurologically intact as regards to motor and sensory testing.

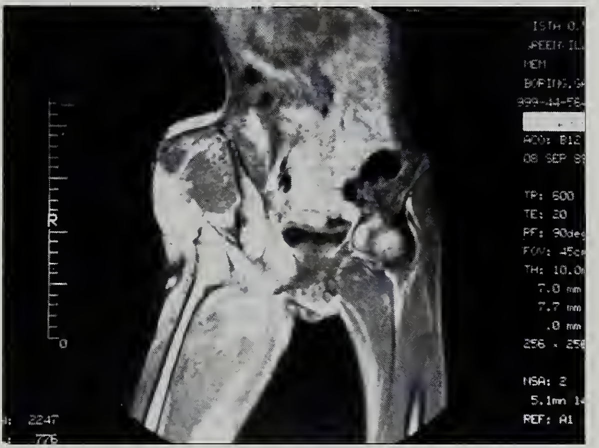

FIGURE 1: C.T. scan of the hip and right thigh reveals extension of malformation in the pelvis in the marked hypertrophy as compared to the left leg.

Angiography, CT scan and MRI were utilized to determine the extent of the disease. They revealed that the vascular mass extended from below the knee distally, into the right hemipelvis and above the iliac crest. The bladder, colon, and iliac vessels were displaced by the vascular lesion in the pelvis but did not appear to be grossly encased. Hypertrophy of the bony elements of both the right lower extremity and pelvis was present but there was no evidence of bone destruction.

Because of the extent of the disease a multi-disciplinary approach was elected involving orthopedics, general surgery and plastic surgery. The treatment was staged with the initial procedure being a diverting colostomy. Subsequently, the patient returned for a right hemipelvectomy with closure of the wound utilizing an antero-medial thigh flap. After complete recovery the patient was again taken to surgery for closure of his colostomy. At

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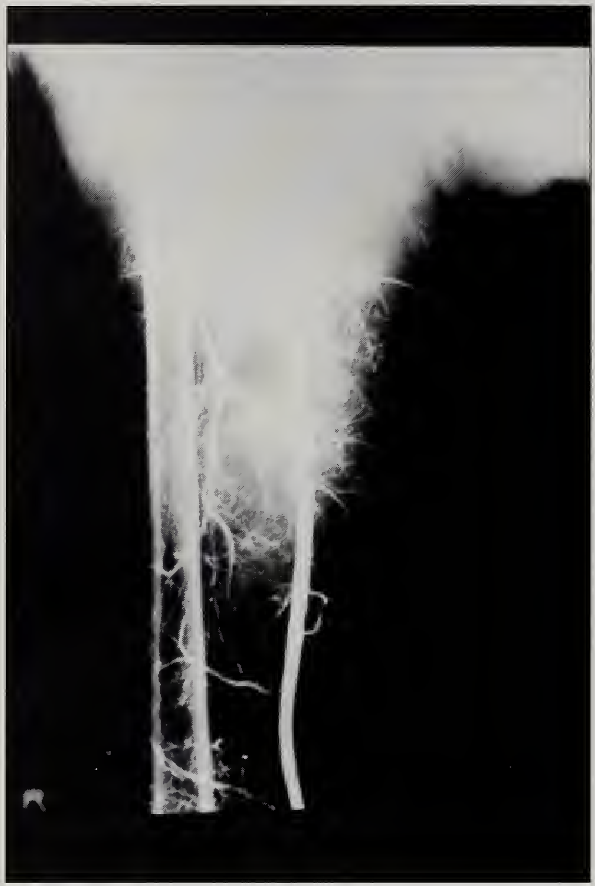

FIGURE 2: Arteriogram revealing the extreme hypervascularity of the vascular tumor in the right extremity.

present, the patient is disease free and reporting a significantly better quality of life.

DISCUSSION

Embryology/Development

Vascular malformations are greatly varied as compared to normal vascular elements. This is due to a departure from the normal embryologic development of the vascular system. During the fifth to tenth week of embryological development the vascular system develops in three stages. During the first stage undifferentiated cells form a primitive vascular network. In the second stage an enlargement of this complex occurs. The third stage is notable for a remodeling such that a mature vascular system is developed with separate arterial and venous components.

Malformations occur when this complex process is interrupted or impaired yielding lesions that represent the stage of development dominant at the time of arrest or interference.[3, 4] Interruption during the early stages of development would yield a lesion without mature arterial or venous components as seen with simple hemangiomas. Conversely, congenital arteriovenous malformations probably are the result of interference with a more advanced stage of development and exhibit a continuum of primitive vascular elements along with mature arteriovenous components.[1, 5]

The classification of vascular malformations utilizes the anatomy of the vascular system. For example, simple hemangiomas are thought to be composed of afferent tributaries of the vascular system (arterioles). Port-wine stains represent an elaboration of the venous side. Finally, arteriovenous fistulas exhibit both efferent and afferent components with mature connections between arterial and venous channels.[2, 13]

Pathophysiology

An attempt to bring definition to the spectrum of congenital vascular malformations has resulted in titles such as hemangioma simplex, strawberry birthmark, port-wine stain, or congenital arteriovenous malformations. Although each lesion has unique characteristics, some common components do exist.

Vascular malformations are more common in women and have a predilection for clustering about the face, neck or the extremities. They usually are limited to the skin or subcutaneous tissues but can occur in deeper tissues such as muscle or bone where they are associated with a more aggressive growth pattern. These lesions are not considered to be precursors of malignant degeneration, but they often exhibit spontaneous growth spurts that may or may not be followed by an equal amount of regression. The growth spurts often are spontaneous or can be associated with trauma, menarche, and/or pregnancy.[2, 3, 5]

Despite overlapping characteristics of these lesions, appropriate diagnosis is important in developing proper treatment regimens. Simple hemangiomas are the most common type of vascular malformation. Despite the potential for rapid growth patterns these tumors are known to regress and require minimal or conservative therapy.[2, 3]

Vascular tumors that involve the efferent limb of the vascular tree, as for example the veins, generally are known to be present at birth but show a less rapid growth phase. Despite this quality, these tumors are less likely to regress and, therefore, more commonly treated. An example of this tumor is the port-wine stain tumor. This tumor is usually present along the cutaneous nerves of the fifth cranial nerve but also may be seen on the extremity. These tumors are not known for regression. Additionally, they have the potential for more invasive growth patterns involving important structures of the head and neck.[2, 3, 13]

Arteriovenous malformations show a more complex histopathology pattern with a more aggressive, but still benign presentation, and occasionally necessitating some form of treatment. A thorough history detailing how long the lesion has been present, recent growth patterns and symptoms associated with the lesion, should be explored.

Clinical Presentations/Physical Exam

Clinical manifestations are generally cosmetic and are the source of complaints brought to the physician's attention by a concerned parent. Commonly a vascular lesion is present that exhibits increased warmth and often some degree of ulceration. Occasionally, marked deformity of an involved area of the face or hypertrophy of an involved extremity will occur. It is in such patients that impingement on adjacent structures with impairment of function occurs. At the extreme is the patient who, because of such a significant arteriovenous connection with a resultant chronic left to right vascular shunt, presents with some degree of congestive failure.[1, 2, 6, 8]

Aside from obvious cosmetic defects, physical findings may be limited. Size, location, number, associated involvement of underlying structures such as muscle or bone, and the potential for cosmetic deformity are all important elements to consider. Of note is that auscultation of a bruit and palpatation of a thrill over the lesion infers the presence of an arteriovenous fistula rather than a simple hemangioma. If a larger arteriovenous fistula is suspected evidence of congestive heart failure should be sought.[1, 2, 6, 8]

Diagnostic Tools

Angiography will often be employed with larger lesions. Whether the lesion exhibits a blush or displays a distinct feeding artery can help differentiate between hemangiomas and arteriovenous malformations. Angiography can also be employed as a treatment modality.[1, 2, 7]

Other commonly used tools include CT scan and/or MRI to determine the extent of the lesion and involvement of adjacent structures.

Plain x-rays are useful to appreciate the degree of bony growth in a hypertrophied limb.

Diagnostic tools, though helpful in defining the extent of the lesion, are in general not prerequisites to the workup of all patients with vascular lesions.

Treatment

Indications for treatment include cosmetic deformity, significant ulceration, rapid increase in size, impingement and compromise of adjacent structures and development of congestive heart failure.

Because of the self-limiting nature of these lesions, the technical frustration inherent in their treatment, and their frequent recurrence, a conservative approach to the patient with vascular malformations is often preferable.

Patients with larger vascular lesions should be prepared for the possibility of long-term treatment involving several specialties. Even with today's technological advances, post-treatment results, treatment complications, and recurrence of the lesion can plague both patient and physicians.

Several forms of treatment are currently in use. The most traditional, but clearly not the most effective, is surgery. Smaller, isolated vascular lesions are easily approached from a surgical manner, but diffuse lesions with extensive involvement pose a greater technical challenge.

For massive lesions the literature details various procedures, from litigation of feeding arterial vessels when present, to attempts at complete extriripation. Historically, these attempts have been met with mixed success depending on the tumor size and complications which include uncontrollable bleeding, disseminated intravascular coagulation, and inadequate excision resulting in recurrence. When these massive lesions involve the extremity, conservative attempts at treatment such as stockings and wraps are recommended prior to surgical consideration.[1,2]

Competence of the deep venous system must be ascertained before surgery as treatment by ligation of superficial veins is sometimes necessary and could greatly impair venous return from the affected extremity. Amputation of an affected extremity is a last resort when all other modalities have been unsuccessful.[1,2,4]

A more recent approach is percutaneous catheterization of a feeding artery proximal to the lesion followed by selective embolization. Selective embolization involves using particulate matter such as microspheres, detachable balloons, Gelfoam and other substances. This technique can be done in staged fashion allowing for the selective partial infarction of the lesion without involvement of normal structures. Complications which limit this technique include local infarction, distal embolization and recurrence due to extensive collateral blood supply to the lesion. Embolization is ideal treatment in areas that are not easily approached surgically. Advances in percutaneous embolization techniques may prove useful, not only in the isolated extremity lesion, obviating or delaying amputation, but also the less convenient areas such as the pelvis.[2,8,13]

Systemic steroids have been found to be useful adjuncts in the treatment of vascular lesions. Limited lesions have been found to show satisfactory responses. In more complex cases steroids can be useful in shrinking the lesion and thus facilitating surgical removal.[7,13]

An additional mode of therapy is that of the argon laser. The argon laser has been found to be a useful adjunct to the treatment of vascular tumors as it is selectively absorbed by hemoglobin and converted to heat. This allows the destruction of the vascular tumor without damage to normal adjacent areas. Additionally, it has been specifically useful in the treatment of port-wine hemangioma.[13]

Modalities that are more controversial in the treatment of vascular malformations include radiation therapy, cryotherapy and hormonal therapy. Currently these do not enjoy the success and acceptance of surgery and percutaneous embolization, but further investigation is being carried out.

SUMMARY

The therapeutic outcome of congenital vascular malformations generally parallels the complexity of the lesion. The less extensive malformations that are prone to regression may be observed.

Larger lesions that produce facial asymmetry or have diffuse extremity involvement require a more aggressive approach.

Even with the limitations of current treatment methods these extensive malformations can usually be controlled thus affording the patient a better life. ☐

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SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION
Joy Drennen, Editor *Contributions welcomed*
798-6207, in Columbia *1-800-327-1021, outside Columbia*

November 1991

HIGHLIGHTS OF BOARD OF TRUSTEES MEETING

At the SCMA board meeting held October 4-6, 1991, the board approved a change in proposed DHEC regulations regarding immunizations required to attend school, kindergarten and child development centers. Under this change, a second measles and rubella requirement to attend kindergarten or first grade would be added in 1992, with a new grade added each year thereafter.

The board requested that SCMA staff develop an education program on the role of physicians with regard to the new laws on the Living Will and Health Care Durable Power of Attorney. Plans for this program will be announced at a later date.

The board voted to support revision of the Certificate of Need law to include outpatient diagnostic and treatment equipment which costs in excess of $600,000, requiring mobile units to have a CON and depoliticizing the appeals process.

Also approved was an HIV/HBV statewide testing network to be administered by the SC Medical Care Foundation to comply with the guidelines promulgated by the Centers for Disease Control. For more information regarding this network, see the article elsewhere in this *Newsletter.* ❑

MEDICARE UPDATE

Use of UPIN Numbers

By now you should have received the September Medicare Advisory from BC/BS. This includes important information on use of UPIN numbers for claims where another physician has referred the patient to you. If there is no referring physician, leave this field blank.

When Medicare is the Secondary Payor

The advisory also contains an in depth description of when you should bill another insurer prior to billing Medicare. In these cases where Medicare is the secondary payor, you may charge more than your Medicare limiting charge; however, you must accept this payment in full if the amount paid is equal to or exceeds the limiting charge.

Physicians in their First Four Years of Practice

An update from Medicare dated October 25, 1991, contains January 1, 1992 rules regulating the Congressionally mandated reductions in fees for these physicians. Because a physician's limiting charge will be 120 percent of his Medicare approved amount, these rules will affect both what Medicare pays and what a nonparticipating physician may charge. Please note that this will affect physicians who are in group practices. The SCMA's Young Physicians' Section has written Congress in opposition to this law. This rule also applies to CRNAs. The reductions do *not* apply to primary care services or to services in rural health professional shortage areas.

New HCFA 1500 Billing Forms

At the time our October newsletter went to print the new HCFA-1500 forms had not been released by the SC Medicare carrier and were still being coordinated by SC Medicare and HCFA. The new 1500 form has now been released in SC and may be obtained from the government printing office, the AMA and private companies. Please note: while the forms have been released, the instructions for completing them have not been approved by HCFA.

Financial Surveys

In the October Medicare Advisory, Medicare indicated the carrier would be mailing Provider Financial Relationship Surveys. As of the date of this printing, no release date has been set. We will keep you informed of any changes.

CPT Codes

The current level of CPT codes (90000-90699, 90750-90764) will be deleted from CPT 1992. The new CPT 1992 Evaluation and Management Codes (E/M codes) will go into effect January 1, 1992. Medicare is mandated to use these new codes for dates of service starting that date. The E/M codes are distinctly different and there are specific new guidelines to follow to use them. Private third-party payors will individually determine when they will use the new E/M codes.

Following are some highlights about the new codes. The new E/M codes will be five-digit numeric (99000 series). The number of levels of care will be the same for some types of service, more for some services and less for some services; hence you will not be able to just "translate" or "crosswalk" the old codes into the new. Your staff will need to learn new coding guidelines. The E/M codes are based on the following components provided by the physician: (1) history, (2) exam, (3) medical decision making, (4) counseling, (5) coordination of care, (6) nature of presenting problem and (7) time. A new patient will be defined as anyone who has not received any professional services from the physician within the past three years.

Medicare will be holding workshops in the next two months regarding these codes. It is very important that you order a new CPT 1992 book and attend these workshops. *To order CPT 1992, call the AMA at 1-800-621-8335. AMA member price: $27.00; non-member: $34.00.* In addition, the AMA is offering a new publication, *Medicare Physician Payment Reform: The Physicians' Guide.* This two-volume set will be available in December and will include the components of the new payment system, It will also include the relative value units by CPT code and the geographic practice cost indices for each payment locality. Cost to AMA members is $37.50; non-members $50.00. *To order by phone, call 1-800-621-8335.*

Cosgrove Vs. Sullivan: Extension of Deadline

Medicare Part B in SC received a lower than anticipated response to their July 12 Medicare Advisory regarding the Cosgrove vs. Sullivan settlement provisions. Due to this low response rate, Medicare has authorized an extension of the 90-day response period which originally ended October 10, 1991. This settlement affects physicians who were hospital-based and paid under a hospital compensation agreement and switched to direct "fee-for-service" billing of individual patients between November 1, 1982 and January 31, 1985. *Physicians should send supporting evidence of this relationship and change to Cosgrove Coordinator, PO Box 100110, Columbia, SC 29202.* ❐

MEDICAID UPDATE

Payment for Pregnant Women and Children

Effective January 1, 1992, the Omnibus Budget Reconciliation Act (OBRA) 1990 prohibits Medicaid payment for physician services provided to a child under the age of 21 or to a pregnant women unless the physician is certified in family practice, pediatrics, or obstetrics; or is employed by or affiliated with a federally qualified health center; or holds admitting privileges at a hospital participating in an approved State Medicaid plan; or is a member of the National Health Service Corps; or documents a current, formal consultation and referral arrangement with a pediatrician or a family practitioner who has the certification described above for purposes of specialized treatment and admission to a hospital.

This applies to *all* physician services provided to a child under the age of 21 or to a pregnant woman, whether the service is unique to children under 21 or is pregnancy related.

If you have any questions, contact your Medicaid program manager in Columbia at 253-6134. ❐

FROM THE OFFICE OF LEGAL AFFAIRS

The Americans with Disabilities Act and Private Physicians

On July 26, 1990, President Bush signed into law the Americans with Disabilities Act (ADA). The ADA is perhaps the most comprehensive piece of federal legislation since passage of the Civil Rights Act in 1964. It will have a dramatic impact on all facets of society, and will affect virtually every enterprise that provides services to the public.

The ADA's broad, somewhat vague language ensures litigation to define specific portions of the act. **However, it is clear at this point that physicians should familiarize themselves with certain aspects of the new law that are not so vague.**

The ADA is composed of five titles, two of which directly affect physicians.

Title I, concerning employment and effective July 26, 1992, will impact hiring and firing decisions with reference to certain employees or applicants who have disabilities defined by the act. Title I will not impact employers with fewer than 25 employees. In 1994, the number drops to employers with less than 15 employees.

Title III, effective January 26, 1991, dealing with "public accommodations," will have a direct impact on physicians in that their offices are specifically named in the act as places of public accommodation. The following points are important for physicians to understand.

- Physicians may not discriminate against any individual with a disability by refusing to provide services, or by providing lesser services than those provided to other patients.

- Physicians must make treatment facilities accessible to persons with all types of disabilities, not just those with mobility impairments.

- A *separate or different* opportunity to participate in a public accommodation's goods or services is permitted -- but only if necessary -- to ensure that the disabled person is provided a benefit that is equally enjoyable or effective as that enjoyed by others.

- To the extent possible, services must be provided in an integrated setting.

- Physicians *must* treat any disabled individual who seeks medical treatment within the range of the physician's professional competence to treat, or make an appropriate referral.

PHYSICIANS SHOULD KEEP IN MIND THAT HIV POSITIVE PATIENTS OR THOSE WITH AIDS ARE CONSIDERED DISABLED UNDER THE ADA!

The ADA requires entities providing public accommodations to make a "reasonable accommodation" to a person's disability by providing an "auxiliary aid or service" relevant to that particular disability.

✓ EXAMPLE: A deaf mute is referred to a surgeon for evaluation of a breast mass. The surgeon must make a "reasonable accommodation" to communicate with the patient by providing an "auxiliary aid or service" such as a person proficient in sign language or some other technical assistance to accomplish communication.

✓ EXAMPLE: An HIV-positive citizen calls the office of a family practitioner for a routine physical. May the office refuse to set an appointment for the patient? *ABSOLUTELY NOT!* This person's request for services is within the range of those services routinely offered by the physician.

The answer to this example may be different if the HIV-positive patient in the office of a family practitioner requests a CT scan to determine the cause of headaches. A referral to a neurologist, ENT, radiologist, etc., may be medically appropriate here, unless the family practitioner routinely orders CT scans for other patients and then follows the patient based on information gained from the CT scan.

Title III also impacts the physical facilities of a health care provider. **At a minimum**, disabled persons must have access to waiting rooms, exam rooms, and at least one bathroom equipped with grab bars, stall space for a wheel chair and lever activated faucets.

Future lawsuits will surely provide guidance on the specific requirements of the act. Until then, do all you can to avoid being a defendant in one of those suits. ☐

CAUTION: This article is only meant to be a very broad introduction to some of the provisions of the ADA. Physicians should seek specific legal advice on the impact of the ADA on their practice, from an employer standpoint as well as the issues the act raises as to physical facilities and treatment of patients.

THE HIV/HBV SAFETY NETWORK

For several months, the SCMA has been studying the Centers for Disease Control (CDC) recommendations for preventing transmission of HIV/HBV to patients during exposure-prone invasive procedures and has developed a voluntary plan to ensure that healthcare workers (HCWs) are in compliance with these recommendations. A bill passed by Congress and awaiting the president's signature will make it mandatory for state health agencies to certify that a system is in place to ensure compliance with the CDC guidelines. The SCMA believes that a privately-run program which sets a statewide standard and ensures confidentiality will be most beneficial for the providers, hospitals and DHEC. On October 16, the SCMA held a news conference to announce the establishment of the *HIV/HBV Safety Network* to the public.

The Safety Network will make testing available for all HCWs statewide. For those who test negative and who agree to follow universal precautions, a certificate of compliance will be issued stating that they are in compliance with the CDC recommendations. For those who test positive, an expert review panel will provide counseling and advise whether or not the provider's practice should be modified. If the provider wishes to perform exposure-prone invasive procedures, his prospective patients and the hospital will be notified. Providers who are not involved in invasive procedures can receive a certificate of compliance without being tested if they agree to follow universal precautions.

In announcing the program, J. Chris Hawk, III, MD, stressed that adherence to universal precautions is paramount in fighting the spread of the disease. Each participant will receive a copy of the universal precautions and will certify that they have read and will adhere to the guidelines.

The SCMA has worked with DHEC, SCHA, SCDA, the State Board of Medical Examiners and the State Board of Dentistry in developing this program. The Safety Network will be run by the SC Medical Care Foundation. *If you have any questions, please call Bill Mahon or Suzanne Hellams at the SCMA office.*❐

FROM THE SC DEPARTMENT OF INSURANCE

The SCMA has received a number of inquiries regarding the appropriate method for notifying the SC Department of Insurance of complaints, including utilization review problems.

To obtain assistance with inquiries and/or complaints, your office should be prepared to provide the Insurance Department with the names of the patient and the insured; the insured's Social Security number; the group/employer's name; the name of the insurance company and/or UR company; the file, case or reference number (if available); a copy of the claim form (if available); and a brief description of the problem.

If you have questions regarding this process, call Tim Baker, Director, UR Section, SC Department of Insurance in Columbia at 737-6100. ❐

RBRVS UPDATE

The RBRVS Conversion Factor of $26.87 as published in the regulations issued by HCFA has been increased to $30.00 as a result of a massive lobbying effort by the AMA and the component societies. The $30.00 figure is 6.5 percent lower than Congress approved and the AMA is seeking legislative relief in the form of a bill (HR.3070) introduced by Representative Pete Stark. Stark's Bill has over 200 cosponsors including all six South Carolina house members. Passage of the bill would raise the conversion factor to $31.30. A Senate Bill (S.1810) jointly sponsored by Senators David Durenberger (D-MN) and Jay Rockefeller (D-WV) has been introduced and, if enacted, would raise the conversion factor to the budget neutral level of $32.00.

The AMA is seeking cosponsors of this bill as well. Despite all of the uncertainty, HCFA is moving to implement the RBRVS on January 1, 1992 along with the revised CPT coding changes. ❐

BLEEDING SECONDARY TO THE USE OF THROMBOLYTIC AGENT IN A PATIENT WITH RECENT RENAL LITHOTRIPSY

JAMES E. BLECKLEY, M.D.
HAROLD G. MORSE, M.D.*

Thrombolytic therapy has become the standard of treatment in the early hours of acute myocardial infarction when bleeding contraindications are absent. Treatment protocols emphasizing major bleeding contraindications have been established in order to minimize the risk of serious bleeding. In a recent review of the literature, we were unable to find any report of the use of thrombolytic agents in patients who have recently undergone lithotripsy for renal stones. We therefore present the following case of renal, subcapsular, and retroperitoneal hemorrhage in a patient given tissue plasminogen activator for an anterolateral myocardial infarction occurring one week following lithotripsy.

CASE REPORT

A 57-year-old male presented to his family physician with the sudden onset of severe anterior chest pain, weakness and diaphoresis. He was given sublingual Nitroglycerin with partial relief of his pain and was referred promptly to the emergency room within two hours of pain. Past medical history was remarkable for symptomatic nephrolithiasis treated with lithotripsy approximately one week prior to admission. He reported full symptomatic recovery from the lithotripsy and follow-up urinalysis had shown no residual microscopic hematuria. He had no prior history of ischemic heart disease.

Physical examination revealed a pale, somewhat diaphoretic Caucasian male complaining of continued substernal chest discomfort. His blood pressure was 120/80 and his pulse was 80 and regular. There was no jugular venous distention and his chest was clear to auscultation. Cardiac examination was unremarkable with no audible murmur, rub or gallop. Peripheral pulses were symmetric and normal. His electrocardiogram was consistent with an extensive anterolateral myocardial infarction. After discussion with the patient's urologist about the possibility of renal hemorrhage, a decision was made to proceed with the administration of 100 mgs. tissue plasminogen activator per standard protocol. Approximately four hours after admission, he developed right flank pain and macroscopic hematuria suggesting intrarenal hemorrhage. His heparin therapy was discontinued and his blood pressure remained stable until approximately 11 hours after admission when he suddenly developed atrial fibrillation with a subsequent drop in his blood pressure. He was treated with Lanoxin and intravenous Metoprolol which restored sinus rhythm, but his hypotension persisted. Despite volume expansion, transfusion, Dopamine and Dobutamine, the patient continued to be hypotensive. He suffered a *grand mal* seizure followed by respiratory arrest which necessitated endotracheal intubation and mechanical ventilation. A CT scan of the head showed no definite hemorrhage but a subsequent MRI of the brain showed multiple areas of hemorrhage into the basal ganglia bilaterally with the largest noted in the right basal ganglion producing a mass effect in the anterior horn and body of the left lateral ventricle. CT scan of the abdomen demonstrated a huge right subcapsular renal hematoma and extensive paranephric and retroperitoneal hemorrhage (Figure 1). The patient failed to respond to aggressive resuscitative measures and expired approximately 48 hours after admission.

SUMMARY

We feel that while our patient succumbed to complications of his extensive anterior myocardial infarction, the devastating renal, subcapsular, and retroperitoneal hemorrhage as

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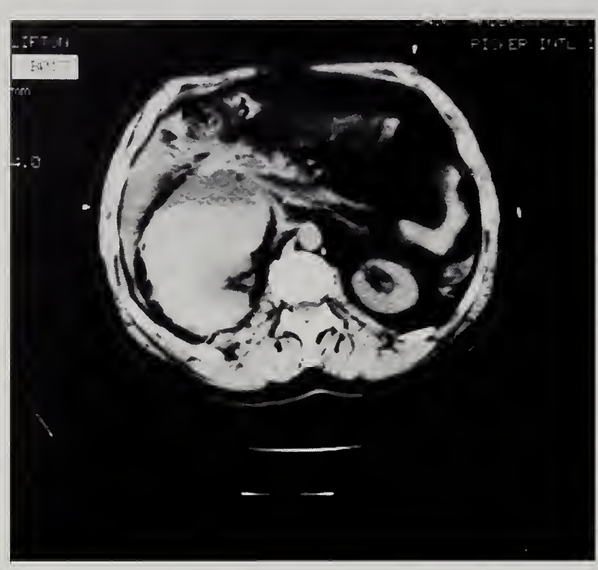

FIGURE 1

well as the cerebral hemorrhage certainly appeared to hasten his demise. From this experience, we now consider recent renal lithotripsy to be a major contraindication to the use of thrombolytic agents. Logically, the time frame for omitting thrombolytic therapy following renal lithotripsy should be similar to that of other major surgical procedures, approximately four to six weeks. □

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Editorial

THANKSGIVING

The people in this world put on a tremendous show, and doctors have a front row seat.
—Carl Augustus Hamann (1868-1930)

You cannot be a perfect doctor, till you have been a patient.
—Stephen Paget (1855-1926)

The 1990s bring mixed reviews. On the one hand, all-out nuclear war seems much less likely than it did a short while ago. On the other hand, prolonged economic stagnation seems distinctly possible. Let us hope that the experts—who base their opinions on such things as national debt, gross national product, balance of trade, and unemployment—are wrong. Meanwhile, we must do what we can to curtail rising health care costs and to bring quality care to the uninsured and the underinsured.

In so doing, we should remember our own good fortune. As physicians, most of us enjoy at least a measure of job security. More importantly, we enjoy the ability to serve, to help others. We should be thankful for the posture that organized medicine continues to take: that it is in fact our *duty* to serve. I take my text from the recent AMA presidential address by Dr. John Ring:

> I believe the course the new AMA has chosen is the right road for medicine: the course of professionalism, of patient advocacy, and of personal sacrifice. It is the way of helping all doctors be better doctors—not necessarily richer, not necessarily more powerful, not necessarily more authoritative—but better doctors.

Dr. Ring closed his address with these stirring words:

> Choose the road that keeps American medicine on the moral high ground of professionalism. . . . Choose the way of sacrifice, of service, and of joy. . . .[1]

Dr. Ring exhorts us to be a profession, not a business.

What does it mean to be a doctor, a professional? For what can we be truly thankful?

I once made a pilgrimage to the Tate Gallery in London to view Sir Luke Fildes' oft-reproduced oil painting entitled simply, "The Doctor." A weary physician studies the pale countenance of a child whom one assumes to be near death. Behind the sickbed, in the shadows of the darkened household, are the parents. The mother weeps; the father tries to console her. The doctor seems able to offer little or nothing other than compassion. Today, that house call would almost surely be unnecessary. The child would be cured by antibiotics. How thankful we should be that we can do so much more than our predecessors!

A currently-showing movie carries the same simple title as Fildes' painting: "The Doctor." The protagonist, Dr. Jack McKee (William Hurt), is a highly successful, swashbuckling, quick-witted San Francisco surgeon who lives in the fast lane and enjoys every minute of it. As the movie opens, McKee repairs a lacerated aorta with breathtaking skill and speed, then erupts with risqué lyrics. He exhorts his residents to "get in, fix it, get out" (please, no compassion). Then McKee learns that he has carcinoma of the larynx. Everything changes.

He begins to appreciate our health care system from a patient's perspective. He learns the annoyances of waiting at the registration desk. He learns the frustrations of things being done incorrectly or not at all. He learns what it's like to be the patient of a highly technical but unsympathetic physician such as his first otolaryngologist. He learns that his own partners are not the white knights he once thought them to be—one of them even altered records when faced with a negligence suit. He learns that a colleague whom he often ridiculed is not a bad guy, after all—actually, a prince. In the end, McKee learns compassion.

McKee learns an old truism: disease, the common fate of living things, is a great leveler. He learns that physicians, in the last analysis, are just ordinary people blessed with the know-how to help other ordinary people. This seems especially important to remember in times of economic privation. To appreciate that we in South Carolina practice in a relatively poor state, we do not have to look far—in fact, no farther than the medical literature.[2] Yet in some parts of South Carolina—perhaps most notably on the sea islands—the contrast between rich and poor is as striking as perhaps anywhere in the world. As physicians, we should be thankful for the opportunity to serve rich and poor alike. We should be thankful for our daily reminders that—as Robert Burns put it—"a man's a man for a' that."

In the preface to the first edition of their textbook, the late Dr. Tinsley R. Harrison and his co-editors wrote in 1950:

> No greater opportunity, responsibility, or obligation can fall the lot of a human being than to become a physician. In the care of the suffering he needs technical skill, scientific knowledge, and human understanding. He who uses these with courage, with humility, and with wisdom will provide a unique service for his fellow man, and will build an enduring edifice of character within himself. The physician should ask of his destiny no more than this; he should be content with no less.[3]

Few have stated our fortunate lot so clearly or so well.

The world is truly a great show. As physicians, we should be truly thankful for our front row seats. But most of all, we should be thankful for our many opportunities to serve.

—CSB

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Letter to the Editor

To the Editor:

I wish to compliment Drs. Rumpel and Jones on their paper, "Lyme Disease in South Carolina" which appeared in the August issue.[1] This paper is significant because it emphasizes that some disease processes must be studied IOBY (In our Back Yard). National data does not always reflect regional circumstances. Some factors which may affect the local incidence of selected diseases are:

1. population susceptibility
2. environmental factors (air, water or soil chemistry)
3. climate
4. presence of vectors
5. social or cultural practices

Rumpel and Jones do this for Lyme disease in South Carolina.

Such papers in the state medical journal compliment or clarify the information the public receives in the lay press (newspapers, TV and magazines) which may not reflect local incidence or extenuating circumstances.

Disease reporting to the health department, although far from perfect as mentioned in the accompanying editorial,[2] provides a more scientific data base for estimates than a physician survey. Therefore, the quality of such papers reflects the attitudes of the physicians directly involved in patient care. Accurate, timely reporting of disease by all physicians is the only method to attain complete data, apply appropriate interpretation of that data and, subsequently, implement suitable control or preventive measures.

The authors should also be complimented on warning South Carolina physicians about the pitfalls of serologic testing for Lyme disease. A recent extensive study by the Association of State and Territorial Public Health Laboratory Directors, co-sponsored by the Centers for Disease Control and the Food and Drug Administration, evaluated seven commercially available test kits for this disease. The 158 test sera were well-characterized, including studies by Western blot. The results indicated a mean sensitivity of 26% to 57% and a mean specificity of 12% to 60%. Therefore, a positive serology is not synonymous with laboratory confirmation. Further details of this study were published in the DHEC Bureau of Laboratories newsletter.[3]

To answer the Editorial question, "Lyme Disease: How Common in South Carolina?" requires reporting by all physicians.

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On the Cover:

PELLAGRA HOSPITAL, SPARTANBURG

Although widespread in Italy where the name means "sour skin," pellagra was unknown in South Carolina until around 1903. By 1907, the southern states were experiencing a serious outbreak. The first official report was made to the South Carolina State Board of Health by the Officers of the State Hospital for the Insane of nine probable cases of pellagra in that institution. South Carolina physicians took an immediate interest. At least two worldwide conferences were called and held in South Carolina to gather the best knowledge available on the disease. At that time the consensus on the etiology of pellagra was that it was due to some unknown toxin produced from moldy corn. Over the next decade three theories were developed and defended by their respective proponents: the insect-borne theory, the excreta-borne theory, and the faulty diet theory.

By 1914 the disease had reached epidemic proportions in the south and in 1916 it was second among the causes of death in South Carolina. The United States Public Health Service set up the Spartanburg Pellagra hospital for investigation and treatment. In 1917 Dr. Joseph Goldberger assumed charge of the hospital. By this time studies had shown the correlation between pellagra and diet. The "Pellagra Diet" consisted of large amounts of highly milled corn meal and wheat flour, pork fat, small portions of vegetables, and little or no milk, lean meat or eggs. Dr. Goldberger carried out feeding experiments at both Epworth Orphanage in Columbia and the Spartanburg hospital and eventually concluded that "pellagra may be completely prevented by diet without intervention of any other factor." Experiments showed that a dried yeast supplemented diet proved very effective in preventing the disease. Dr. Goldberger called this additive vitamin PP (pellagra preventing). Following this discovery, the South Carolina State Board of Health made available at cost to those at risk about 75 tons of Brewers' yeast between 1928 and 1931. (It was some years after the death of Goldberger in 1929 that nicotinic acid was isolated and recognized as the PP.)

Unfortunately, many of the secondary causes of the disease were sociologic, economic and educational, and the eradication of pellagra from South Carolina was not accomplished until the Second World War when the Food and Nutrition Board required that white bread be enriched.

Betty Newsom, Curator
The Waring Historical Library

Auxiliary Page

SCMA AUXILIARY AMA-ERF

The American Medical Association Education and Research Foundation was founded in 1950 to contribute to the support of medical education. Over the past 41 years more than 53 million dollars has been distributed to medical schools across the nation. These contributions from physicians and their families have been used by medical schools to help students pursue their medical careers through the availability of scholarships, grants, and loans. In addition these funds support a variety of student programs.

In quoting Dr. J. O'Neal Humphries, Dean of the USC School of Medicine, he states that "One of the programs, *Issues* and *Ideas*, is organized by the students themselves. They have speakers during their noon lunch break on a weekly basis. These speakers address areas not covered in the traditional curriculum such as: the value of organized medicine to the medical profession and society; what is it like to have your wife die of AIDS which she acquired following a blood transfusion in 1982; does our dog pound properly care for and dispose of animals, etc." Other student programs include the summer rural health initiative of the Student Health Coalition and work projects in the community.

Dr. Layton McCurdy, Dean of MUSC, listed worthwhile Student Government Association projects, providing travel funds for students attending professional meetings, assisting in the Golden Apple Ceremony which recognized excellence in medical teaching as recipients of gifts received last year through the Medical Student Assistance Fund.

Last year South Carolina raised $28,011.79 for our two medical schools through the combined efforts of the SCMA and its auxiliary. We were pleased to have had 100% participation of the active county auxiliaries. Almost 20% of SCMA members made contributions along with renewal of their membership last year. A total of $31,450.84 was presented to our medical schools at the annual SCMA Convention.

This year the SCMA Auxiliary will continue to support our past projects. The most widely used, tax deductible fundraiser is the Holiday Sharing Card. The AMA-ERF Memorial Card, stating that a donation has been made in memory of the deceased is a special, thoughtful way for medical society and auxiliary members to mark the passing of a colleague, friend or family member. Your County or State Auxiliaries, AMA, or ERF Chairman will be able to assist you with this. Our statewide project, "A Christmas Tree Skirt Raffle," was held on October 16th. The participation was excellent and we are proud of this job well done.

Donations to AMA-ERF are a legacy from one generation of medical professors to another. The quality of medical care and of its practitioners depends on our continued support through gifts to the foundation.

LURA HOLLER
SCMAA AMA-ERF Chairman

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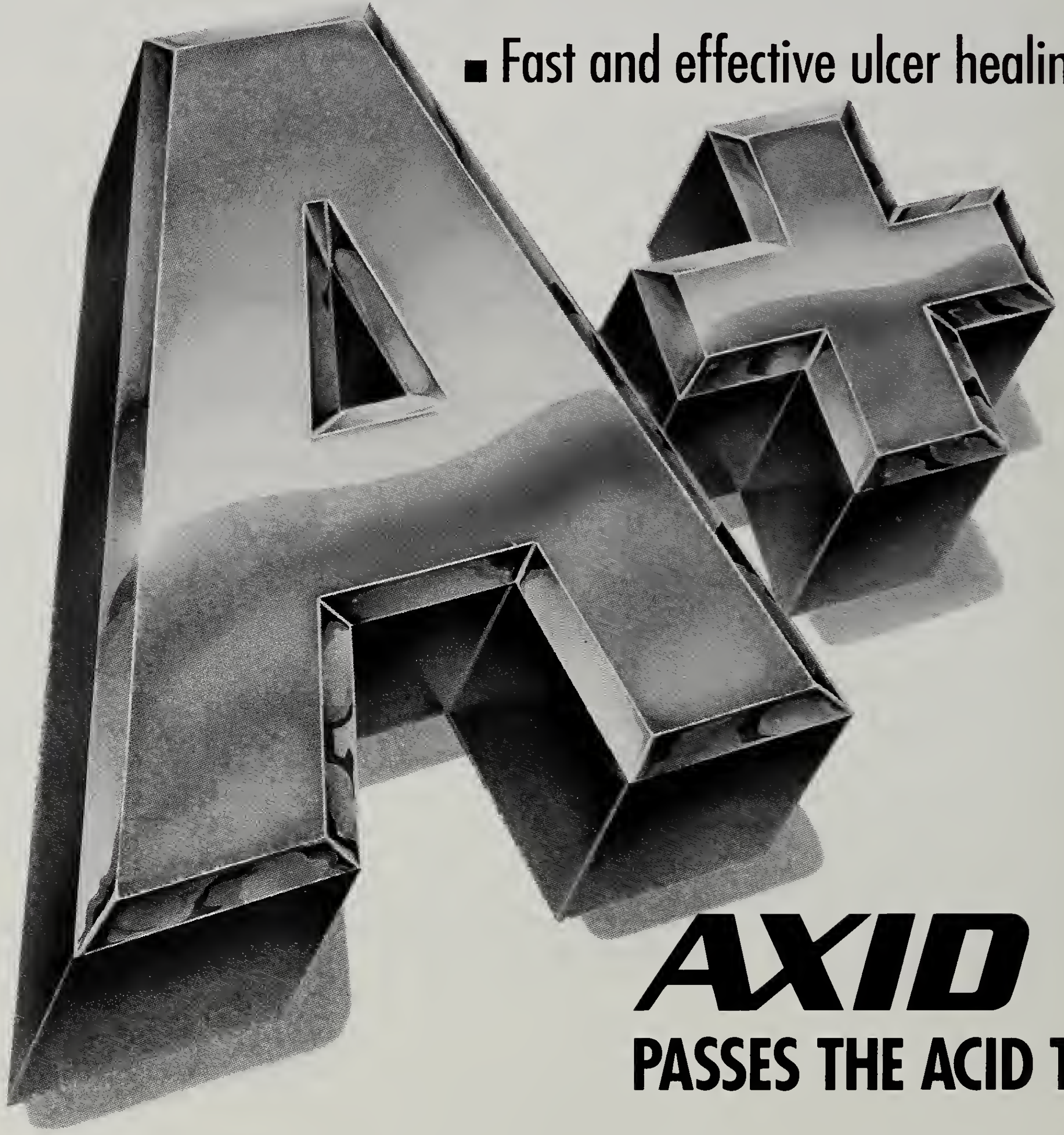

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See adjacent page for references and brief summary of prescribing information.

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President's Page

INDIVIDUAL RESPONSIBILITY

The headline caught my eye: "AIDS Commission report should have encouraged individual responsibility." Columnist Joan Beck of the Chicago *Tribune* was criticizing the AIDS Commission for failure to emphasize the importance of avoiding high-risk behavior that allows the AIDS virus to spread. The Commission had 30 recommendations, including comprehensive medical care, long-term care, housing options, and income maintenance for all people with HIV infection. However, no mention was made of the individual behavior that accounts for the AIDS epidemic.

AIDS is a preventable disease. Those who have high-risk behavior must modify that behavior or endure the consequences. As physicians we have an ethical duty to provide medical care for AIDS patients, but we cannot prevent the disease for them. They must accept that responsibility. Magic Johnson spoke out where the AIDS Commission was silent. He started his campaign on AIDS education by emphasizing that everyone must behave responsibly.

The concept of individual responsibility is not new. We could examine it in every aspect of society, from personal and family lifestyles, to communities, industry, and government. As Americans we enjoy more freedom than the citizens of any other country, but shouldn't we have some responsibility as well? Health care is now considered a right for all our citizens, but shouldn't it likewise involve some responsibility?

Louis Sullivan, M.D., Secretary of Health and Human Services, outlined the personal responsibility necessary to have a more effective and less costly healthcare system. He emphasized the importance of a healthy lifestyle, pertaining to tobacco use, alcohol and drug abuse, diet, exercise, seat belts, violence, etc. If Americans adopted a healthier lifestyle, it is estimated that the total cost of health care could be reduced by 20 percent.

I recently had a patient whom I was treating for her third and fourth intraoral cancers. The first one ten years ago had been cured by major surgery. The second cancer five years ago had been cured by highly technical radiation therapy. However, she continued to smoke and drink alcohol and has developed two additional cancers. She is now divorced and has no health insurance. The "system" will take care of her. I have done the same operation, and she has had the same hospital care, as if she were a millionaire paying cash. But who will really pay for the cost of her care? All of us.

As our healthcare system undergoes major changes, a greater emphasis on healthy lifestyle and individual responsibility should be incorporated. Physicians have an obligation also. We must set a good example, promote a healthier lifestyle, educate our patients on the importance of prevention, and remain patient advocates.

Best wishes for the holiday season and a healthy and happy new year.

J Chris Hawk III MD

J. Chris Hawk, III, M.D.
President

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The Journal OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

VOLUME 87 DECEMBER 1991 NUMBER 12

SMOKING PREVALENCE IN SOUTH CAROLINA, 1985-1989*

JOYCE A. HALLENBECK, M. Ed.**
MARCIA L. MACE, M.P.H.
FRANCES C. WHEELER, Ph.D.
PETER R. LEE, M.P.H.

To monitor smoking prevalence and trends in South Carolina, the South Carolina Department of Health and Environmental Control, Center for Health Promotion, through a cooperative agreement with the Centers for Disease Control (CDC), has conducted an ongoing statewide telephone survey of adult South Carolinians since 1984. The purpose of the Behavioral Risk Factor Surveillance System (BRFSS) is to monitor and assess the health habits of the population 18 years of age and older and to identify groups of individuals with certain life-styles and behaviors which place them at risk for adverse health outcomes.

In this paper, an analysis of five years of BRFSS data illustrates that smoking continues to be a significant problem in South Carolina, particularly among certain race-sex groups. The continuance of this problem will ensure that cardiovascular disease and cancer will continue to be leading causes of premature mortality in the state.

METHODS

Data were derived from the South Carolina BRFSS, which interviewed approximately 1,800 adult (age 18 and older) state residents each year, using a standardized core questionnaire and interview protocol recommended by CDC. Respondents were selected by means of a multi-stage sampling design, using random digit dialing techniques.[1] To determine the prevalence of cigarette smoking, smokers were defined as persons who have smoked at least 100 cigarettes in their lifetime and who currently smoke. Observations from the survey were weighted to adjust the sample to the estimated age, race, and sex distribution of the state's population.

In 1989, the South Carolina BRFSS (n=1,869) was designed to produce prevalence data accurate at approximately ±1.8% of the true mean values at the 95% confidence level. This means that the overall prevalences (percentages) obtained from the telephone survey are within 1.8% of the responses expected of the total South Carolina adult population.

RESULTS

To assess recent trends in cigarette smoking in South Carolina, we analyzed data from the BRFSS for the five-year period 1985-1989. Although the changes were not statistically significant, a downward trend is apparent. As

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Table 1

PREVALENCE OF CURRENT SMOKING WITHIN RACE-SEX GROUPS AND AGE GROUPS SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM 1985-1989

CHARACTERISTIC	PERCENT AT RISK				
	1985	1986	1987	1988	1989
TOTAL	29.3	26.5	25.3	25.7	24.3
RACE-SEX GROUP					
White Male	33.5	27.6	31.6	30.9	31.4
White Female	24.8	26.8	22.6	22.6	22.2
Black Male	40.3	32.9	27.7	28.0	23.3
Black Female	22.3	17.6	12.8	19.3	13.9
AGE GROUP					
18-24	30.5	23.4	14.4	24.0	24.4
25-34	33.4	31.3	31.1	32.6	27.9
35-44	35.4	31.7	32.5	31.7	25.8
45-54	36.4	28.3	33.0	23.8	30.4
55-64	22.6	22.2	20.2	24.4	23.8
≥65	10.7	17.6	15.5	11.1	11.0

shown in Table 1, the prevalence of smoking in South Carolina declined from 29.3% in 1985 to 24.3% in 1989. The greatest decline over the five-year period occurred among blacks, particularly black males. Since 1987, a greater percentage of white males have reported smoking than any other race-sex group. Smoking prevalence declined among persons under 55 years old, but increased among those 55 years of age or older.

The five-year period 1985-1989 showed an overall five percent decline in smoking prevalence among South Carolina adults. The greatest decline in smoking over the five-year period occurred among blacks, particularly black males, whose smoking prevalence dropped 17%. The decline was less than three percent for both white males and white females. A greater percentage of black males smoked in 1985 and 1986 than any other race-sex group, but in subsequent years, this distinction was held by white males.

Smoking prevalence also declined among most age groups between 1985 and 1989. For those under 55 years of age, smoking prevalences were lower in 1989 than in 1985. However, smoking prevalence increased over the same time period among persons 55 years of age and older. Examination of the data for individual years for each age group shows moderate fluctuations in prevalence among the various age groups during the five-year period.

It should be noted that the prevalence data (percentages) reported here for race-sex groups and age groups reflect the percentages of current smokers *within that group*—not in the total survey sample. This method of reporting prevalence facilitates identification of "at risk" populations for health promotion efforts.

COMMENT

When reviewing these results, several potential sources of bias in the BRFSS should be acknowledged. First, the telephone survey methodology itself may lead to biased population estimates because of over- or under-representation of certain groups. Weighting of the data to adjust for the age, race, and sex distribution of the population at least partially corrects this problem.

The validity of survey results also is dependent upon the accuracy of the responses given by the persons interviewed. The accuracy of responses is affected by the respondents' ability to accurately recall past behavior and their willingness to respond honestly. Survey respondents may understate behaviors that are generally considered unhealthy, socially unacceptable, or illegal; they may report a healthier life-style than they actually practice. The amount and direction of these potential biases vary depending on the specific risk factor.

Further, persons of lower socioeconomic status are less likely to have telephones; persons in households with telephones have fewer health risk factors than those without telephones; and smokers are less likely to respond to health surveys than are nonsmokers.[2] Thus, health risk behavior prevalences that are based on telephone surveys may be underestimated.

Consideration of these potential sources of bias suggests that the BRFSS results may underestimate the prevalence of smoking in South Carolina. In view of the national prevalence of smoking (29% in 1987)[3] and South Carolina's tobacco-state status, it is likely that the prevalence of smoking in the state is higher than the 24% obtained from the 1989 BRFSS telephone survey.

CONCLUSION

For more than a decade, smoking has been recognized as the chief avoidable cause of disease and preventable premature mortality in the United States. Every Surgeon General's Report since 1969 has documented, with increasingly strong evidence, the devastating effects of smoking on the morbidity and mortality of the American people. Cigarette smoking has been linked with coronary heart disease, chronic obstructive pulmonary disease, emphysema, and stroke; cancers of the lung, larynx, pharynx, esophagus, oral cavity, pancreas, bladder, and kidney; and other health problems, such as respiratory infections, ulcers, and poor pregnancy outcomes due to low-weight births.[4, 5]

In 1985, there were an estimated 390,000 smoking-related deaths in this country, accounting for more than one of every six deaths in the United States.[5] CDC's conservative estimate of 434,000 smoking-related deaths in 1988[6] is 11% higher than the 1985 estimate.

Despite a steady decline in smoking prevalence in the past 25 years (from 40% of adults in 1965 to 29% in 1987), more than 50 million persons continue to smoke.[3] Assuming that the trend observed between 1974 and 1985 continues, 40 million Americans 20 years of age and older (22% of the adult population) will be smokers in the year 2000.[7]

While smoking prevalence has declined in South Carolina, it remains a significant health risk factor among adult South Carolinians. If considered a disease, smoking would be the third leading cause of death in South Carolina. To achieve the goal of reducing cigarette smoking to no more than 15% of adults by the year 2000, South Carolina will have to implement a multi-faceted campaign strategy carried out by *all* health care professionals, as well as the mass media, to prevent smoking initiation, foster smoking cessation, and reinforce non-smoking as a societal norm. ☐

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CARDIAC SURGERY FOR PATIENTS MAINTAINED ON CHRONIC HEMODIALYSIS*

J. SCOTT WILLIAMS, B.S.
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Cardiovascular disease causes almost 40% of the deaths in patients maintained on chronic hemodialysis (HD).[1] These cardiovascular diseases include coronary artery disease (CAD), bacterial endocarditis, and pericarditis. All three conditions may require surgical intervention, however, CAD and bacterial endocarditis also require the use of extracorporeal circulation (ECC).[2] Of these two, CAD is the leading cause of mortality.[3,4] CAD in this group is due to an increased rate of the atherosclerotic process secondary to such factors as hypertension, increased cardiac output, hypertriglyceridemia, abnormal carbohydrate metabolism, pericarditis, and elevated levels of parathyroid hormone (PTH), each of which are found in chronic renal disease.[1] The second of these cardiovascular diseases, bacterial endocarditis, may be a severe manifestation of repeated HD.[2] It has only been in the last two decades that cardiac surgery has been an option for these patients.[1,2,5,6,7,8]

METHODS AND MATERIALS

A retrospective review of all patients undergoing cardiopulmonary bypass at MUSC in the interval January 1980 to July 1991 was used to identify 11 hemodialysis patients undergoing 12 cardiac procedures. These patients represented 0.3% of the open heart procedures performed at MUSC during that interval. Pertinent information and morphological characteristics for the study sample are presented in Tables One and Two. There were six coronary artery bypass grafting procedures (CABG) and six valve procedures for endocarditis. The CABG patients averaged 3.0 bypasses, all using reversed saphenous vein grafts, and the valve patients included four aortic valve replacements, one aortic valve cusp repair using a pericardial patch, and one mitral valve replacement. In the aortic position, two mechanical valves (St. Jude 1, Bjork-Shiley 1) and two tissue valves (cryopreserved homograft 1, Carpentier-Edwards porcine 1) were used. In the mitral position a Carpentier-Edwards porcine tissue valve was used. It is notable that Patient 5 underwent a second aortic valve replacement for bacterial endocarditis after being noncompliant with medical therapy and continuing IV drug abuse after her first aortic valve replacement.

Prior to 1988, cardiopulmonary bypass was conducted employing a bubble oxygenator and roller pump. During coronary artery bypass grafting, the aorta was cross clamped and about 1500 mL of crystalloid cardioplegic solution at 6-8°C containing 24 mM/L of KCl was employed to maintain cardiac arrest. In some patients, potassium was omitted after the initial dose of cardioplegic solution. After 1988, patients were supported with a membrane oxygenator and roller pump during cardiopulmonary bypass. Some patients received blood cardioplegic solutions (Hct 12%) with potassium concentration of about 24 mM/L. During cardiopulmonary bypass in all patients, attempts were made to scavenge and drain cardioplegic solution returning from cardiotomy suction and vent sources in order to avoid excessive potassium administration. Hemoconcentrators were employed during bypass to remove excess patient non-cellular volume. During bypass, if the patient's

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Table One

MORPHOLOGICAL AND PERIOPERATIVE CHARACTERISTICS OF CHRONIC HEMODIALYSIS PATIENTS WHO UNDERWENT CARDIAC SURGERY

Patient	*Age*	*Race*	*Sex*	*Months on Dialysis*	*Procedure and Year*	*Minutes Crossclamp*	*Minutes Pump Time*	*Days ICU*	*Days Hospital*
1	61	B	F	18	CABG x 4 91	131	195	2	14
2	62	B	F	6	AV Repair '91	64	97	2	11
3	51	B	M	96	CABG x 2 '90	70	97	2	10
4	68	B	M	19	CABG x 3 '90	67	102	2	10
5	33	B	F	53	AV Rplcmt.(2) '89	193	254	3	10
	33	B	F	48	AV Rplcmt.(1) '89	105	148	3	28
6	55	B	F	48	CABG x 2 '88	35	57	3	8
7	54	W	M	36	CABG x 4 '85	88	120	2	12
8	40	B	M	120 HD 24 PD	AV Rplcmt. '84	95	151	4	14
9	72	W	F	36	MV Rplcmt. '84	50	97	4	19
10	50	B	M	72	AV Rplcmt. '82	59	82	2	8
11	41	B	M	12	CABG x 3 '81	47	114	9	16
AVG.	51.8			47.0	83.7	126	3.2	13.3	
S.D.	13.0			34.6	43.8	54.1	2.0	5.70	

ABBREVIATIONS: CABG=coronary artery bypass graft, AV=aortic valve, MV=mitral valve, Rplcmt.=replacement, HD=hemodialysis, PD=peritoneal dialysis, AVG.=average, S.D.=standard deviation

Table Two

PERIOPERATIVE CHARACTERISTICS OF CHRONIC HEMODIALYSIS PATIENTS WHO UNDERWENT CARDIAC SURGERY

Patient and Procedure		*Blood Products*	*Complications*	*Graft or Valve Prosthesis*
1	CABG x 4	5 PRBC	Hyperkalemia, Hypertension	Saphenous v.
2	AV Repair	4 PRBC, 1 Pool Plts	Hyperkalemia, Yeast Vaginitis	Pericardial Patch
3	CABG x 2	2 PRBC, 3 FFP, 5 Cryo, 1 Pool Plts	None	Saphenous v.
4	CABG x 3	5 PRBC, 1 Cryo, 1 Pool Plts	None	Saphenous v.
5	AV Rplcmt.	2nd OP: 6 PRBC, 4 FFP, 1 Cryo, 1 Pool Plts	Hyperkalemia, Nonspecific Vaginitis	19.5mm Cryopreserved Homograft
	AV Rplcmt.	1st OP: 7 PRBC	Hyperkalemia, RBBB, LLL Pneumonia	21mm Carpentier-Edwards
6	CABG x 2	4 PRBC	Hyperkalemia, Intermittent SVT	Saphenous v.
7	CABG x 4	18 PRBC, 2 FFP	Hyperkalemia, Atrial Fib	Saphenous v.
8	AV Rplcmt.	33 PRBC, 9 FFP, 17 Pool Plts	Hyperkalemia, Atrial Flutter, Post-Op Bleed	29mm Bjork-Shiley
9	MV Rplcmt.	38 PRBC, 14 FFP, 30 Pool Plts	Hyperkalemia, LLL Pneumonia, Death	31mm Carpentier-Edwards
10	AV Rplcmt.	16 PRBC, 4 FFP, 13 Pool Plts	Hyperkalemia	27mm St. Jude
11	CABG x 3	22 PRBC, 15 FFP	Hyperkalemia, Post-Op Bleed	Saphenous v.

ABBREVIATIONS: PRBC=packed red blood cells, FFP=fresh frozen plasma, Cryo=cryoprecipitate, Pool Plts=pooled platelets, RBBB=right bundle branch block, LLL=left lower lobe, SVT=superaventricular tachycardia plasma K^+ activity exceeded 6.5 mM/L, hemodialysis against a nonpotassium containing dialysate was employed.

RESULTS

One hospital death occurred for an operative mortality of 8.3%. This patient experienced cardiac arrest after developing a left lower lobe pneumonia, and expired on post operative day 19 (POD#19). Two patients recovered uneventfully after their procedure and without complications. In-hospital complications occurred in nine patients and included hyperkalemia ($K^+ > 5.5$ mM/L) (9), cardiac dysrythmias (4), infections (4), episodes of excessive bleeding (2), and hypertension (1). Five patients required HD during the first postoperative day to control potassium levels. The other five patients responded to conservative treatment (kayexelate, 10% dextrose in water with insulin, and/or calcium gluconate) so that HD could be postponed until POD#2 or POD#3).

Infectious complications included two patients with left lower lobe pneumonia and two with vaginitis. Both patients who experienced vaginitis were on systemic antibiotics for bacterial endocarditis. One patient had significant chest tube drainage for three hours after surgery, but bleeding resolved after platelet infusion. Another patient had persistent bleeding, developed tamponade, and was returned to the operating room for ligation of a saphenous vein graft tributary.

DISCUSSION

The major cardiovascular complications of chronic HD include CAD, bacterial endocarditis, and pericarditis. CAD and bacterial endocarditis may require cardiac surgery with ECC.[2] The results of surgery in this series of chronic renal failure patients, including operative mortality and immediate complications (except hyperkalemia), are not significantly different from those obtained in patients with normal renal function. This is consistent with other published studies.[1, 5, 7] This study also documents the complications that commonly occur and the considerations that should be made when patients on chronic HD undergo cardiac surgery.

First, the absence of renal function in patients undergoing ECC and cardiac surgery may predispose these patients to significant electrolyte imbalances. Other factors that increase the risk of post surgical electrolyte imbalance include the use of potassium-containing cardioplegic solution and the use of large amounts of stored blood and blood products.[6] Also, hypoperfusion, related to severe anemia and commonly found in chronic renal failure patients, can lead to metabolic acidosis, which further accentuates electrolyte imbalances.[6] These electrolyte abnormalities, especially the hyperkalemia found in this subgroup of patients, may contribute to cardiac dysrhythmias which occur after cardiac surgery.

Intracardiac scavenging of cardioplegic solution,[9] hemodialysis during ECC,[6] and ultrafiltration during ECC,[10] have been used to maintain potassium within acceptable levels. After surgery, HD can be resumed as early as the first post operative day without difficulty. Patients with arteriovenous fistulae (for hemodialysis) must have this fistula carefully protected (appropriate positioning, padding, etc.) during surgery as clotting of these shunts is a common complication even without surgery. One study advocates the placement of a peritoneal catheter perioperatively to allow post-surgical peritoneal dialysis until the cardiovascular system becomes more stable in the post operative course.[1] The proposed advantage of this method includes avoiding the complications of sudden hemodynamic changes and mediastinal bleeding which may accompany HD and regional heparinization.[1] We have not found this necessary and have no experience with this technique.

A second issue that needs to be considered are the non-cardiac systemic manifestations of chronic renal failure. There is relatively high morbidity and mortality associated with patients maintained on chronic HD. An annual mortality rate of eight to 11 percent has been reported.[3, 4] Most of this death rate is accounted for by cardiovascular disease, but one of the major noncardiovascular causes of death includes infection-related processes.[11] Chronic renal failure patients have well-documented defects in chemotaxis, phagocytosis, and cellular immune responsivity that may contribute to the increased rate of infection.

Fortunately, we did not encounter problems with wound infection or mediastinitis in this series, but one patient did die after developing severe pneumonia.

Another common manifestation of chronic renal failure which is important in this group of patients is an increased incidence of post operative bleeding.[5] Abnormal platelet function has also been well documented in uremic patients. All of our patients received blood products, and seven patients received platelets. Only two had significant post operative bleeding. Surgery may increase the potential morbidity and mortality of the abnormal response to infection and the abnormal hemostasis which result from chronic renal failure. Again, with proper preoperative planning and careful intra and postoperative management, these patients can be operated upon safely.

The cardiovascular systemic manifestations of chronic renal failure must be considered. The factors which originally led to the increased incidence of heart disease in these patients may continue to adversely affect the cardiovascular system in the postoperative period. The hypertension and hyperparathyroidism that result in left ventricular hypertrophy, and increased cardiac output associated with chronic renal failure may narrow the margin between myocardial oxygen supply and myocardial oxygen demand.[7] This study finds that perioperative mortality and morbidity as measured by hospital duration, ICU duration, and complication rate are not significantly different than that reported by other studies.[5, 7]

Even after surgery, the long term cardiovascular processes of chronic renal failure are still occurring. The hypertension and increased cardiac output may interact with hypertriglyceridemia, elevated levels of PTH, and abnormal carbohydrate metabolism to accelerate the atherosclerotic process.[1] This increased atherosclerotic process has been implicated in the increased CAD in these patients,[3, 7] and it has also been shown that the atherosclerotic process will precipitate disease in the saphenous vein grafts. With the higher risk of wound infection and bleeding found in these patients, the saphenous vein has been the traditional choice of graft due to the ease of harvesting and the lower risk of complications as compared to the harvest of a different graft. One study has postulated that the use of internal mammary artery grafts, which are more resistant to development of atherosclerotic disease, may significantly prolong survival in chronic HD patients. Blakeman, et al, have shown that this conduit can be harvested and grafted in these patients without a significant increase in morbidity or mortality as compared with other chronic HD patients who receive a saphenous vein graft.[8] It has previously been shown that internal mammary artery grafts provide certain advantages over saphenous vein grafts in patients with normal renal function, including improved graft patency, increased survival, and less risk of late cardiac events.[12]

Choice of prostheses for valve replacement is just as important as choice of conduit replacement. Although there is little literature on how chronic HD affects valve prostheses, there is ongoing controversy as to whether mechanical or tissue prostheses should be used. In this series, if there were no contraindications, younger patients received mechanical valves. Although a mechanical valve has a higher risk of thrombosis and hemorrhage secondary to lifelong anticoagulation therapy, its use avoids subsequent reoperation due to valve degeneration, a characteristic of tissue prostheses.[13, 14] The older patient received a tissue valve which has a lower rate of thrombosis.[13, 14] Tissue valves, however, have been shown to undergo early calcification when placed in patients with chronic renal failure, and therefore may not be an ideal substitute for these patients.[15] In this series, the one exception to this reasoning was Patient 5, who was the youngest patient in the study sample. Her history revealed noncompliance with medical therapy and a substantial risk of bacterial endocarditis due to IV drug abuse. Therefore, she was given a tissue valve on both her initial and repeat operations to avoid possible noncompliance with anticoagulation therapy and to take advantage of the less thrombogenic surface.

SUMMARY

This study confirms and extends the available information about cardiac surgery in patients with chronic renal failure. With appropriate precautions, CABG and valve repair can be carried out in these patients without significant increase in operative mortality or morbidity as compared to patients with normal renal function. However, these patients remain susceptible to accelerated atherosclerosis in native vessels as well as bypass grafts and to complications (thromboembolism, infection) of prosthetic valves. Accordingly, while these patients are often significantly improved as a result of their cardiac surgery, long term outlook is guarded. □

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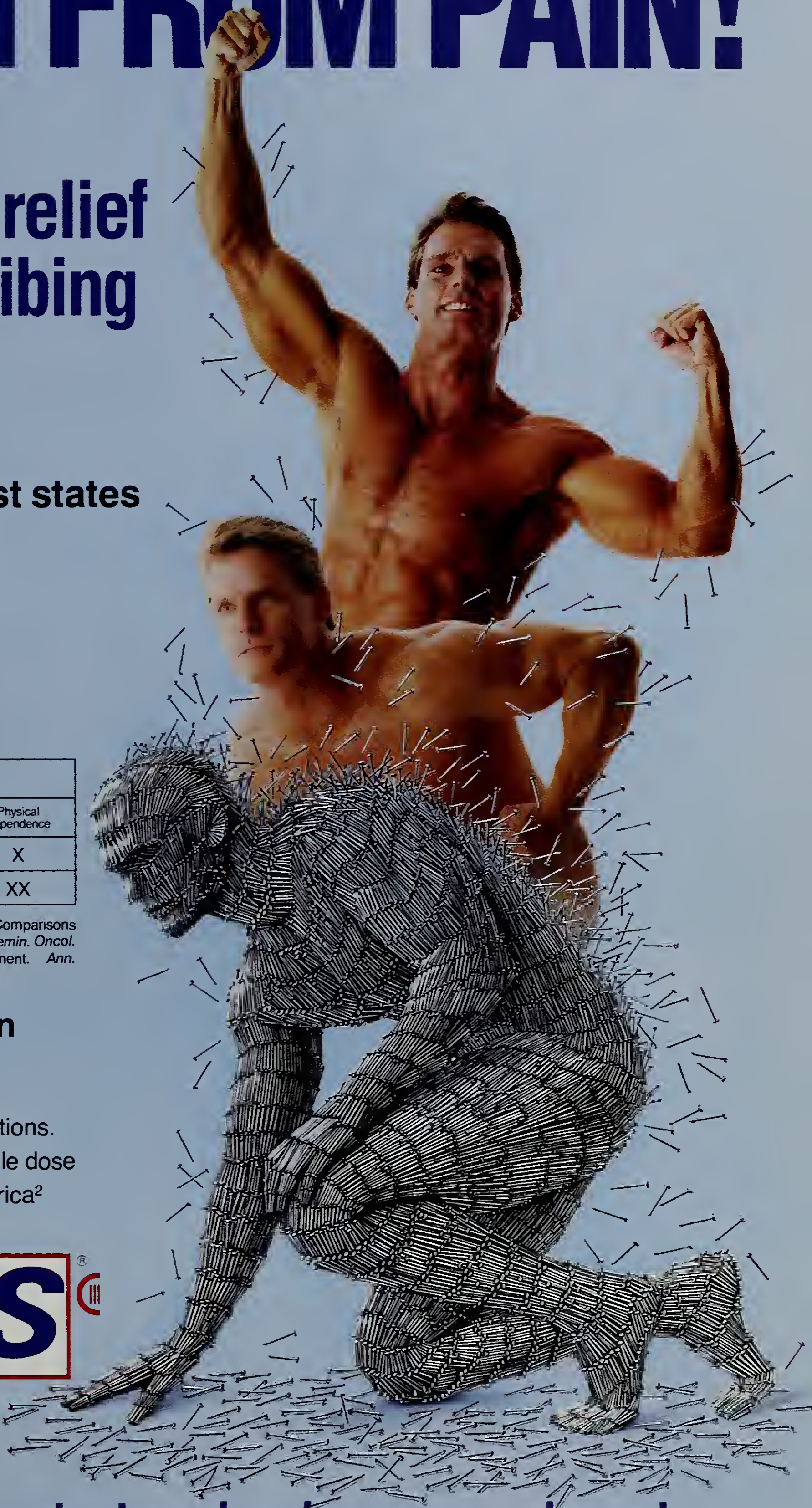

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The following SCMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned.

Jose Albert, M.D.
Joy S. Anglea, M.D.
Larry S. Atkinson, M.D.
O'Neill Barrett, M.D.
Kamal S. Basily, M.D.
Nancy L. Curry, M.D.
Parmanand J. Dawani, M.D.
Joseph R. Dorchak, M.D.
Sami B. Elhassani, M.D.
John A. Harrill, M.D.
Barry H. Hellman, M.D.
Donald G. Kilgore, M.D.
Perry I. Lupo, M.D.
J. Lorin Mason, M.D.
David M. McInnis, M.D.
Rael Nidess, M.D.
J. David Osguthorpe, M.D.
E. Neal Powell, M.D.
Eugene D. Rutland, M.D.
Lee J. Saindon, M.D.
Peter A. Tucci, M.D.
James P. Weeks, M.D.
Thomas A. Whitaker, M.D.
Charles M. Wolff, M.D.

SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION
Joy Drennen, Editor
798-6207, in Columbia
Contributions welcomed
1-800-327-1021, outside Columbia

December 1991

HIGHLIGHTS OF NOVEMBER 20 BOARD MEETING

At its meeting on November 20, the SCMA Board of Trustees discussed the ethical and legal issues concerning medical records. It took action on policies pertaining to ownership of records, patients' rights to copies of their records, fees for copying records, records retention guidelines and issues relating to retirement or change of location. At a later meeting, the Board will review these policies for possible legislative actions.

In preparation for the 1992 SCMA Annual Meeting, the board discussed the method by which a quorum will be determined for sessions of the House of Delegates. It was agreed that only those delegates who had registered will be counted for the total number, as opposed to the total number from all areas (i.e., county societies, specialty societies, etc.) which could possibly be seated if all delegates were in attendance. ❑

MEDICARE UPDATE

As this newsletter goes to press, physicians have received their Medicare fee schedules, guidelines for coding of evaluation and management visits and their par/non par information. Your questions are just starting to be received. The major recommendations of the SCMA at this time are (1) physicians and their staff should carefully review the material received from Medicare prior to attending the Medicare workshops; (2) if you wish to change your participation status, you must return the signed agreement by December 31; and (3) prepare to use the new evaluation and management codes as of January 1.

In making your par/non par decision for 1992, please realize your limiting charge for each code is the same percentage by which your 1991 limiting charge exceeded the prevailing charge but no more than 120 percent above the 1992 fee schedule. On the other hand, because the fee schedule is now the same for all physicians, in all specialties, you may wish to reexamine your decision to be participating if the major reason you had chosen to participate was to maintain a higher charge with the hope of eventually increasing your Medicare allowed fee.

Offices with physicians in their first four years of practice will receive a separate, reduced fee schedule and limiting charges for these physicians. Federal law requires that Medicare charges not exceed these special limits. (Exceptions to these special limits were made by Congress for rural physicians and primary care services.)

The SCMA is preparing assistance for physicians and their staff regarding the changes in Medicare, including the new evaluation and management coding rules. Depending on the interest and needs of you and your staff following the Medicare workshops planned by BC/BS of SC, the SCMA is considering a special mailing and/or additional workshops. Your input is requested. *Please call Barbara Whittaker or Cindy Osborn of the SCMA staff with your comments, questions and concerns regarding Medicare and physician payment reform.* ❑

MEDICAID UPDATE

Payment for Physician Services to Pregnant Women and Children

In last month's Newsletter, we listed minimum qualifications a physician must meet for purposes of billing Medicaid for physician services provided to pregnant women and children. Omitted from that list as one of the criteria under which a physician could be qualified was the fact that he or she had been certified by the HHS Secretary as qualified to provide physician services to children under 21 years of age.

Pain Management

Pain management or pain therapy is covered by the SHHSFC under the following guidelines: When an epidural is utilized to control pain, the physician should bill code 62279 for the placement of the catheter. Epidurals for deliveries should be billed using the appropriate anesthesia CPT codes for those services. Subsequent days of management of an epidural may be billed using the code 01996 with the appropriate modifier for either the physician or CRNA. This code cannot be billed for the same date of service as the catheter placement. Hospital visit codes should not be billed in addition to the daily management code. When prescribing the PCA pump for pain management, the physician should bill the code 90610, extended initial consultation, for the setup of the pump. Subsequent days of management of the PCA pump should also be billed using the code 01996 and the appropriate modifier.

Sterilizations

Be reminded that the Code of Federal Regulations (CFR) §441.253 states that Federal Financial Participation (FFP) is available in expenditures for the sterilization of an individual only if: (a) the individual is at least 21 years old at the time consent is obtained; (b) the individual is not a mentally incompetent individual; (c) the individual has voluntarily given informed consent in accordance with all the requirements prescribed in §§441.257 and 441.258; and (d) at least 30 days, but not more than 180 days, have passed between the date of informed consent and the date of the sterilization, except in the case of premature delivery or emergency abdominal surgery. An individual may consent to be sterilized at the time of a premature delivery or emergency abdominal surgery, if at least 72 hours have passed since he or she gave informed consent for the sterilization. In the case of premature delivery, the informed consent must have been given at least 30 days before the expected date of delivery.

If you have any questions, contact Ms. Tracey Bradley in Columbia at 253-6140.

Revised Immunization Log

You should now be using the revised immunization log for vaccines administered to Medicaid children. For reporting and reimbursement purposes, it is necessary to differentiate HIB conjugate from HIB Titer. *If you have questions, regarding use of this EPSDT log, contact Paula Trulley or Sandra McCord in Columbia at 253-6121.* ❒

HCFA TO RELEASE CLIA REGULATIONS

The Health Care Financing Administration is scheduled to release final regulations to implement the Clinical Laboratories Improvement Amendments of 1988, or CLIA 88, in January 1992. Physician office laboratories and other testing sites will be required to meet the federal regulations.

To help physicians prepare for CLIA evaluations, the AMA co-founded the Commission on Office Laboratory Accreditation, or COLA. The other co-founders are the American Academy of Family Physicians, the American Society of Internal Medicine and the College of American Pathologists. The SCMA has learned that SC physicians have recently received a form from HCFA requesting information about your office lab. You are required to return the form within 60 days to HCFA, Attn: CLIA Lab Inquiry, PO Box 26687, Baltimore, MD 21207-0487. You may send written questions whether or not the law applies to you or how to complete the form to the above address. *For a copy of the form, please call Jenifer Dobbs at the SCMA.* ❒

With implementation of the federal Patient Self-Determination Act in December, 1991, physicians should familiarize themselves with the requirements of several SC laws covering both end-of-life decisions and healthcare decisions that can be made by someone other than the patient in non-emergency situations that do not concern end-of-life-decisions.

The Death With Dignity Act: Living wills are effective when the patient has a "terminal condition," meaning an incurable or irreversible condition that, within reasonable medical judgment, could cause death within a reasonably short period of time if life-sustaining procedures are not used.

Under 1991 amendments to the law, a living will can also become effective if a patient has entered a state of "permanent unconsciousness," defined as a medical diagnosis that a person is in a persistent vegetative state or some other irreversible condition in which the person has no neocortical functioning, but only involuntary vegetative or primitive reflex functions controlled by the brain stem. The law requires that two physicians certify the patient's condition is terminal or that the patient is in a state of permanent unconsciousness as outlined above before the living will is given effect.

What Type of Treatment can be Withdrawn or Withheld? "Life-sustaining procedures" are any procedures or intervention which would serve only to prolong the dying process and where death will occur whether or not the procedures are utilized. Life-sustaining procedures do not include the administration of medication or other treatment for comfort care or the alleviation of pain.

Artificial nutrition and hydration is a life-sustaining procedure and can be withdrawn or withheld if the patient has indicated in his or her living will that he or she does not desire such treatment. In the absence of such a provision, nutrition and hydration necessary for the comfort of the patient and alleviation of pain must be provided.

Is there a Mandatory Period During Which Care Must be Provided? The act states that life-sustaining procedures must be used at least for six hours after diagnosis of the terminal condition or state of permanent unconsciousness. This does not mean that life-sustaining procedures must be employed for six hours every time a patient with a terminal condition presents for treatment. Thus, the record should be documented as soon as possible that the patient's condition is terminal under the definition of the act.

Certification based upon a diagnosis of permanent unconsciousness may not be made until the patient has remained unconscious for at least 90 consecutive days, or at any time if the patient has experienced massive destruction or atrophy of the cortex as evidenced by neurodiagnostic studies or gross inspection of the brain, or some other characteristic of the patient's condition allows a diagnosis of permanent unconsciousness to be made with a high degree of medical certainty.

Revocations: Revocation of a living will is not effective until it is communicated to the attending physician. Therefore, it is imperative that mechanisms exist in the hospital setting to allow notice as soon as possible to the attending physician that a revocation has occurred.

Durable Powers of Attorney: A durable power of attorney for health care is a specific legal document wherein a person designates another person to make healthcare decisions for him if he is unable to do so. Unlike living wills, the patient does not have to be "terminal" or in a "state of permanent unconsciousness" for the document to be given effect. The patient simply must be unable to communicate in a meaningful, non-ambiguous manner with healthcare providers to inform them of his desires or to consent or refuse to consent to medical treatment. This is true even if the disability preventing communication is one that will last only short term.

The Adult Health Care Consent Act: Although not included as an "advance directive," it is important for SC physicians to know about the Adult Health Care Consent Act.

This act allows decisions about health care to be made by other people (so-called "surrogates") in the event a patient is unable to communicate with healthcare providers and has no written advance document such as a living will or durable power of attorney. Like a durable power of attorney, the patient does not have to be in a terminal state or permanently unconscious for the act to apply. The patient has to be unable to consent, meaning unable to appreciate the nature and implications of his or her condition and proposed health care, unable to make a reasoned decision concerning health care, or to communicate the decision in an unambiguous manner.

A list of persons with priority to make healthcare decisions is set out in the act, and should be incorporated into hospital protocol flowsheets to ensure compliance with the act. The act requires that two physicians certify the inability of the patient to consent, each of whom has examined the patient. The certifying physicians must also note in the patient's chart the cause and nature of the inability to consent, its extent and its probable duration.

None of the above acts apply to minors! *Direct questions to Steve Williams at SCMA Headquarters.* ☐

CPT 1992 HAS GONE TO PRESS

In an effort to assure availability of *CPT 1992* in time to meet the January 1, 1992 deadline for implementation of the new RBRVS payment system which is inextricably linked to the use of new CPT codes, the AMA has pushed the publication schedule several weeks ahead of previous years.

Books should be available for mailing in late November on a first-come, first-served basis. Many physicians have already been provided access to these new codes through the comprehensive training programs that Medicare carriers have been providing and will continue to offer over the next several weeks. Recognizing the importance of these codes to many practicing physicians, the AMA has arranged with HCFA to distribute a condensed version of these new codes and the first set of validated clinical examples along with the traditional "Dear Doctor" letter.

It appears at this time that most insurance companies will be able to accept the new codes for dates of service as of January 1, 1992. BC/BS of SC and Companion Health Care will accept both the old and new E/M codes for dates of service from January 1 through March 31, 1992. Effective with dates of service from April 1, 1992, only the new codes will be accepted. *To order CPT 1992, call the AMA at 1-800-621-8335. AMA member price: $27.00; non-member: $34.00.* ❑

OTHER PUBLICATIONS AVAILABLE

The CPT Assistant developed by the AMA in December, 1990, will be utilized by AMA, HCFA and other third-parties as a primary vehicle for distributing up-to-date coding policies and interpretations. Subscriptions to *The Assistant* may be obtained by calling the AMA's Order Department, 1-800-621-8335.

AMA Guidelines on Gifts to Physicians from Industry: SCMA Staff has been receiving calls with questions regarding these guidelines since they were released in December of 1990. The AMA Council on Ethical and Judicial Affairs has developed a list of questions and answers which interpret many of the gray areas in the guidelines. These guidelines, along with the questions and answers interpreting them, have been distributed to SCMA-accredited sponsors of CME in the state, since continuing medical education meetings and conferences are specifically affected. Gifts from industry to individual physicians are also addressed, as well as contributions towards social functions, student scholarships, etc.

For a copy of the guidelines and interpretations contact Joy Drennen at the SCMA .

Locum Tenens "How-to" Guide: Physicians looking and recruiting for short-term, locum tenens assignments will want a copy of a new comprehensive guide just published by the AMA. This guide tells step-by-step how practices can successfully recruit prospects and how physicians can locate satisfactory locum tenens opportunities. It includes a checklist for recruitment and specific tips for checking credentials and references, interviewing, and negotiating and preparing contracts.

The AMA also offers Locum Tenens Service for physicians looking for short-term positions and for practices recruiting temporary replacements. *For more information about the Guide and the Service call 1-800-955-3565.*

Rural Health Clinics: The book from the SCMA/SCHA seminar on how to reconfigure your practice into a rural health clinic is available at a cost of $27.00 from the Hospital Association. *To obtain a copy, call Joyce Young in Columbia at 796-3080.* ❑

CAPSULES

Thomas C. Rowland, Jr., MD, OB/GYN from Columbia, was elected last month as President-Elect of the Southern Medical Association during its 85th Annual Scientific Assembly. Dr. Rowland is a past president of the South Carolina Medical Association and the South Carolina Medical Care Foundation.

Self Memorial Hospital was surveyed last month by the SCMA Committee on Continuing Medical Education and awarded two years' accreditation as an accredited sponsor of continuing medical education for physicians. SCMA accreditation seeks to assure both physicians and the public that the CME activities sponsored by Self Memorial Hospital meet the high standards of the Essentials for Accreditation of Sponsors of CME. *To find out how your hospital can become accredited as a CME sponsor, call Joy Drennen at SCMA Headquarters.*

REGIONALIZED PERINATAL TRANSPORT SYSTEMS: ASSOCIATION WITH CHANGES IN LOCATION OF BIRTH, NEONATAL TRANSPORT, AND SURVIVAL OF VERY LOW BIRTH WEIGHT DELIVERIES*

THOMAS C. HULSEY, M.S.P.H., Sc.D.**
WILLIAM B. PITTARD, III, M.D.
MYLA EBELING

In South Carolina, infants weighing less than 1500 grams at birth (VLBW) represent less than two percent of all deliveries yet they simultaneously represent approximately 50% of neonatal deaths each year.[1] Several studies have reported that the survival rates for very low birth weight (VLBW) infants are markedly improved when delivered in a regional medical center.[2-4] Indeed the development of newborn intensive care units and transport systems for moving perinatal patients to regional health care centers with these facilities, has been associated with significant reductions in neonatal mortality.[5-6]

As part of a national trend, South Carolina initiated an aggressive regionalized perinatal care program approximately four years ago.[7] A major part of this multifaceted initiative was increased support of regionalized perinatal transport systems. On July 1, 1986, the Medical University of South Carolina began to phase in a structured transport program in response to this statewide effort. Initial emphasis was placed on acquiring dedicated transportation vehicles staffed by individuals with training specific to neonatal transport. Secondly, meetings were held in each hospital in the Lowcountry Perinatal Region to apprise local physicians and nurses of this new program. Finally, a program of continuing outreach education was initiated that provided clinical inservice training in the community hospital on a regular basis.

To evaluate the progress of both maternal and neonatal (perinatal) transports in our perinatal region during this time of expansion, we examined the location of very low birth weight deliveries and subsequent transport across a four year period which characterized various phases of the growth of our transport program.

METHODS AND MATERIALS

The yearly number of infants delivered in the hospitals of the Lowcountry Perinatal Region (AMI East Cooper, Beaufort Memorial, Beaufort Navy, Charleston Navy, Colleton Regional, Hampton General, Hilton Head, Medical University, Roper, St. Francis, and Trident Regional Medical Center), July 1985-June 1989, was provided by the Office of Vital Records and Public Health Statistics, South Carolina Department of Health and Environmental Control. These data represented the baseline from which the percentage of outborn very low birth weight (VLBW) infants delivered in the Lowcountry Region could be calculated. Using these data, both the total number of births and the number of VLBW births were determined by hospital and county of occurrence. During the study period, there were approximately 12,000 infants delivered annually.

Utilizing the MUSC transport surveillance system and the MUSC perinatal information system, the number of maternal transports, inborn VLBW, and VLBW infants delivered in the Lowcountry Region who were transported to MUSC were identified. Maternal transports were defined as mothers transported to MUSC for imminent emergency delivery. Finally, the hospital course of infants delivered at a community hospital and transported to MUSC was compared to that of infants delivered at MUSC.

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**Address correspondence to Dr. Hulsey at the Department of Pediatrics, Medical University of South Carolina, 171 Ashley Avenue, Charleston, S.C. 29425-3313.

Additional data recorded for each VLBW infant admitted included birthweight, sex, one and five minute Apgar scores, method of funding [public (Medicaid), private (private insurance carrier), or indigent (no third party funding)], and for outborn infants age (in hours) of the infant when transport was initially requested and age of the infant when the transport team arrived at the community hospital.

These data were compared across the different time periods which represented specific expansion activities at MUSC (7/1/85-6/30/86; 7/1/86-6/30/87; 7/1/87-6/30/88; 7/1/88-6/30/89). The period from July 1, 1985 to June 20, 1986 represented the period during which there was no specialized neonatal transport system at MUSC. On July 1, 1986, ambulance transport service was contracted with a private provider but staffed by a MUSC team composed of pediatric/neonatal intensive care nurses and respiratory therapists. On July 1, 1987, dedicated helicopter and ambulance services were initiated; and on July 1, 1988 the neonatal transport team began 24-hour/day in hospital coverage.

RESULTS

During the four-year period there were 681 VLBW births to 47,461 deliveries (1.4%) in the Lowcountry Perinatal Region. This rate was similar to that for South Carolina over the four-year period. Examination of VLBW deliveries by time periods indicated no statistically significant change in the VLBW rate across the four-year period (x^2 4.4; 3df; p=0.22) for the Lowcountry Perinatal Region. Of the 681 VLBW births, 551 (80.9%) delivered at MUSC (214 of which were emergency maternal transports for imminent delivery) and 130 delivered in community hospitals, 76 (58.5%) of which were subsequently transported to MUSC for intensive care.

Overall, VLBW births to transported mothers accounted for 38.8% of the VLBW births delivered at MUSC. While there was no significant change in this annual percentage of VLBW births admitted to MUSC via maternal transports, the number of VLBW infants admitted to MUSC from emergency maternal transports increased 32% from 47 (85/86) to 62 (88/89).

Examination of neonatal transports for each of the four time periods indicated a statistically significant (p<0.025) increasing trend[8] in the percentage of transported neonates as 12 of 35 (34%), 13 of 29 (45%), 21 of 28 (75%) and 30 of 38 (79%) respectively, VLBW outborn infants were transported to MUSC.

The survivorship (to discharge from MUSC) of outborn transported VLBW neonates was 75% (9/12), 85% (11/13), 76% (16/21), and 63% (19/30) for each of the four years assessed, and 72% overall. The median one and five minute Apgar scores were 5 and 7 in 1985 and 4 and 6 in 1989.

For maternal transports, the survival to discharge for each of the four time periods was 72% (34/47), 68% (37/54), 75% (38/51), and 81% (50/62), respectively and 74% overall. Among the VLBW infants delivered at MUSC who were not the result of maternal transports, the survival was 68%, 75%, 67%, and 69%, respectively.

Table

Number and Percent Survival of Very Low Birth Weight Infants by Method of Transport, and Birth Weight Category (1986-1989).

	Method of Transport		
Birth Weight Group	*In-Utero*	*Neonatal*	*In-Born*
500-749g			
Number	31	10	44
% Survival	38.7%	30.0%	22.7%
750-1499g			
Number	136	54	208
% Survival	83.1%	79.6%	81.7%
Total	167	64	252

Differences in birth weight distributions and infant survival were compared between in-utero transports, neonatal transports, and inborn deliveries for the three-year period (FY87-FY89) during which the transport system was operative (see Table). Infant survival was highest for in-utero transports regardless of birth weight category. For neonatal transports, differences in survival between 500-749 gram infants and 750-1499 gram infants were presumed to be primarily due to selection bias. Infants between 750-1499 grams had greater survival if delivered at MUSC (in-utero and inborn).

The infant's age at which transport was requested by the community physician decreased for each of the three years during which the transport system became fully operational. During the first year of the transport program (fiscal year 1987), 50% of infants were within the first hour of life when transport was requested and this increased to 59% (FY88) and 62% (FY89). For all three time periods combined, infant survival was indirectly related to the age of the infant upon arrival of the perinatal transport team. For those infants transported within the first four hours of life, the survival rate of those who were treated by the neonatal transport team within the first hour of life was 75%. This decreased to 64% for the second hour of life, 62% for the third hour, and 60% for the fourth hour of life.

Although there was little variation in economic status of patients across the four year period, private patients predominated among maternal transported inborn VLBW infants and indigent patients predominated among the non maternal transported inborn VLBW infants. The four-year total number of indigent patients was 192 (56%), 31 (15%), and 27 (36%) among inborn, maternal transports and outborn transported VLBW infants respectively. Similarly, the number of private patients was 73 (21%), 154 (72%), and 47 (62%) among the inborn, inborn maternal transported and outborn transported VLBW infants respectively.

DISCUSSION

During the four years examined, the improvements in the Lowcountry perinatal transport system have been accompanied by a significant increase in the number of VLBW infants transported from community hospitals. In addition, there has been a consistent annual increase in the proportion of requests for transports within the first hour of the infant's life. There has also been a concomitant increase in survival when the transport team has contributed to treatment within the first hours of life.

These data also indicate that transported mothers and neonates represent populations selected for their likelihood for success (infant survival), as the survivorship of transported VLBW infants or VLBW infants delivered to women transported in labor was generally improved over that of the regional hospital inborn VLBW infants. Examination of birth weight categories underscores the importance of this selection bias in infant survival. For infants between 500-749 grams, the increased survival of transported neonates over inborn infants probably reflected the decision not to transport infants with conditions deemed incompatible with life. The fact that fewer transported neonates (15.6%) were within this birth weight category (as compared to 17.5% for inborn and 18.6% for in-utero) is consistent with this theory. Although the small numbers should be interpreted with caution, the lower survival of transported neonates 750-1499 grams (79.6%) compared to in-utero (83.1%) and inborn (91.7%) may represent a reverse in the selection bias for this weight group.

Although it is difficult to isolate the specific contribution to improved perinatal outcome in South Carolina's Lowcountry Perinatal Region resulting from the increasing availability of a well trained transport team, this contribution has been documented in other settings. It is also understood that another major contributor to the improved perinatal outcome in the Lowcountry Region has been the community healthcare team.

The needs of perinatal patients are most often clearly identified by providers in community hospitals. Accordingly, appropriate therapy is usually initiated by referring hospital personnel to the limits of their capabilities and the care provided by the transport team is therefore frequently a continuum of that therapy or on occasion an improvement on it. While the quality of the transport team influences survival, its effect can only be demonstrated in infants that survive long enough to be transported, a factor heavily influenced by referring hospital personnel.

Finally, the larger percentage increase in number of outborn VLBW infants transported per year from 1986-1989 than percentage increase in number of outborn deliveries per year reflects the active regionalization program including both maternal and neonatal transports. Accordingly, from 1986 through 1988, the VLBW neonatal survival rate increased in the Lowcountry Region community hospitals from 47% to 64%.

Regionalized perinatal care has progressed well in South Carolina and with improved understanding, physical facilities and state funding, an optimal system of perinatal care continues to evolve. It must be understood however that high risk perinatal care in its entirety cannot and, in fact, should not be conducted solely at tertiary care (regional medical) facilities. As stated, by Dr. Warren Derrick, Professor and Chairman of Pediatrics, University of South Carolina School of Medicine, "the next logical phase in the evolution of regionalized perinatal care should be the establishment of multiple fully-staffed and well equipped Level II centers within each region."[9] The use of level I or II community hospitals near an infant's home for continuing care (more frequent feeding and more intensive nursing care than available in the routine well baby nursery) is a crucial procedure to avoid overcrowding in tertiary care nurseries. Further, this procedure increases the efficiency of tertiary bed utilization, increases neonatal care participation by primary physicians and reduces the cost of neonatal health care.

SUMMARY

Changes in both the location of very low birth weight births and in the number of infants selected for transport were chosen for the evaluation of regionalized perinatal care and its effectiveness in the Lowcountry Perinatal catchment area. The four-year period reviewed was characterized by the initiation of a well-defined regionalized perinatal transport program at the Medical University of South Carolina. In conjunction with this increased availability of transport, there was a statistically significant ($p<0.02$) increase in the number of VLBW neonates transported to MUSC after being delivered in community hospitals. This increase was accompanied by an increase in the proportion of infants referred for transport within the first hour of life. Among those neonates referred within the first four hours of life, survival was inversely proportional to the infant's age when the transport team arrived, suggesting that a rapid response by the neonatal transport team was associated with a significantly increased VLBW infant survival. Among all transported infants, in-utero continues to be the most efficacious means of transport for VLBW infants and that delivery of VLBW infants at regional medical centers continues to result in the most optimal survival. ☐

ACKNOWLEDGEMENTS

We thank the Office of Vital Records and Public Health Statistics, South Carolina Department of Health and Environmental Control for their help in providing summary vital records data in the fiscal year format required for our analysis.

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Editorials

From time to time, The Journal *receives articles from other periodicals with the request that we consider reprinting them. Our usual policy is to decline such re-publication. However, the following article—sent to us by the* Annals of Internal Medicine (115: 570-571, 1991)*—justified an exception for two reasons. First, the essay contains a poignant message with which most physicians should be able to identify. Second, the author, Dr. Clifton R. Cleaveland, is a native South Carolinian. Indeed, Clif was a role model for those of us fortunate to have known him as a medical student and resident, and our only regret is that he chose to practice in Tennessee rather than in his native state. A former Rhodes scholar, Clif continues to be exemplary in every way: as an outstanding physician; as a community leader; and as a reflective person concerned about the deeper meanings of life. Readers, enjoy! Guest editorials reflect the opinions of the authors and do not necessarily reflect the opinions of the officers and trustees of the South Carolina Medical Association.*

—CSB

CPR

The week had been tiring and discouraging—more long-term patients than usual had come to my office with illnesses for which I could do little but empathize and palliate. Aged men and women with fading intellects, emphysemic men slowly fading on continuous oxygen, a young woman with rapidly progressive motor neuron disease—I felt progressively stymied and ineffectual, longing for some more acute situation in which I could work toward a cure.

I sought respite at a weekend showing of the new movie version of *Hamlet*. The reviews had been enthusiastic, and I was prepared for a cinematic treat. Thirty minutes passed, and I was really into the film, marvelling at the language, the scenery, and the splendid diction of Close and Gibson. Then a door at the rear of the cinema opened, and an usherette cried out that a doctor was needed. Reflexively, I followed her out. As we rushed to the auditorium next door, I asked what was wrong. She said that a man had been shot. I ran down the center aisle to the side of an old man stretched out supine, apparently having a had a cardiac arrest. The house lights had not yet been turned up. *Dances With Wolves* played on the screen. Apparently the old man's collapse into the aisle had coincided with gunfire from the soundtrack. Some of the audience clustered around; others nearby seemed fixed in their seats; most in the full house were unaware of what had happened. An elderly lady wept in an adjacent seat.

He was not breathing. He had no pulse. My reflexes took over as I began chest compressions and directed a nurse who had just arrived to begin mouth-to-nose respirations.

"Call 911."

"We have."

Kevin Costner continued on the wide screen behind us, blurring our boundaries of reality. Another nurse arrived and then a family physician acquaintance. The elderly lady, apparently the victim's wife, sobbed "What will I do, what will do? We'll have no place to live." I tried to lend comfort as I elicited a fragmentary history from her. He had had a heart attack 5 years earlier, he took digoxin, he had been asymptomatic and active.

"Where's the Rescue Squad?"

"We've called again."

Five compressions and a breath, five compressions and a breath; the house lights slowly came up. His pupils were reactive; the old man began to breathe; he moved his lips.

Our impromptu team was gaining. A firm carotid pulse at a rate of 30 to 40 was present and then faded. I resumed chest compressions while one of the nurses mopped my forehead and helped to remove my sweaty jacket. The family physician spelled me at the chest, and I checked pupillary responses and femoral pulses, now bounding from the closed chest massage. The old man moved his hands—the last spontaneous movement we were to see.

After 20 minutes a fireman arrived with a bottle of oxygen, and I took another turn at the chest—five and one, five and one. The numbing and pounding work of resuscitation continued. Helpful strangers guided the tearful wife away from the circle and tried to console her. From the back door the theater manager announced that everyone should leave and obtain a refund of ticket prices. Many patrons, however, remained frozen in their seats, staring now at the film's buffalo stampede. Perhaps the movie freed them from the horror that all now perceived in the center aisle.

Finally the equipment-laden rescue squad arrived, as did a third physician, who placed an IV in the man's left arm. One EMT inserted an endotracheal tube, while another attached the leads of a cardiac monitor. Coarse ventricular fibrillation. We shocked. No response. Bicarbonate and lidocaine were given, followed by a second shock and another. A junctional rhythm appeared briefly before deteriorating into fibrillation. The electrical and chemical ritual of resuscitation continued against a backdrop of increasing hopelessness. Three doctors, three nurses, and a team of EMTs were powerless to do any more in the theater aisle. We eased the old man onto a board, board onto stretcher, and then stretcher into ambulance. The rescue squad assumed control for the several-mile ride to the nearest hospital. I learned later in the day that the death begun in the theater had ended in the emergency room.

Who was the old man? What would become of the new widow? Who was the retarded adult sitting next to her? A stranger? A kinsman? Why was she worried about losing her home? I knew neither the man nor his wife, yet in the curious way of clinical medicine, a bond of sorts had been struck.

I was weak, sweat-drenched, and utterly wrung out. I wanted to cry. I wanted to know the old man's story. For a brief few minutes our lives had twisted together. I was sharply aware of my own mortality because he lost his life. I felt shaky, decidedly nonprofessional, and vulnerable. I washed up in the cinema's restroom and composed myself. As I rejoined my wife for what remained of *Hamlet*, Mel Gibson delivered the Prince's epiphany to Yorick's skull; words made all the more piercing by the real life just concluded. We viewed the compounded tragedy of the final scene: Gertrude, Claudius, Laertes, Hamlet all dead. Horatio was left to mourn and to struggle to make sense of the calamities engulfing the survivors.

As physicians we see much. Like firemen, things go predictably for us most of the time, and then chaos erupts. At such times we are trained to shift to methodical, automatic countermeasures. Sometimes these prevail. Oftentimes death prevails. Grief erupts and swirls about us. Our job is to try to restore order, to allay somehow the grief and hurt of others. But what becomes of the feelings engendered in us?

The immediate feelings—fatigue, frustration, a sense of aloneness—will fade. Over a longer term we may think that tragedy may broaden our sympathies, but tragedy may also quietly add to our burden of grief, building like charge in an emotional capacitor. Burnout lurks always, or worse, insensitivity. We try to distance ourselves from the hurt by speaking to colleagues of a failed code or some intervention gone awry. We retreat behind jargon and understatement. Somehow we put the mask of professionalism back in place. We are ready for another day.

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Also dealing with resuscitation, the following editorial was stimulated by the letter-to-the-editor in the September 1991 issue by Dr. Steven J. Rosansky. Guest editorials reflect the opinions of the authors and do not necessarily reflect the opinions of the officers and trustees of the South Carolina Medical Association.

—CSB

BEFORE STARTING RESUSCITATION FIRST KNOW WHAT YOU ARE GETTING INTO

When there is a sudden and unexpected stoppage of vital signs, i.e. no arterial pulse, no sign of respiration, almost invariably there is a frantic call for help. This is especially true when the incident involves an apparently healthy adult and above all a child. Manual artificial respiration is the first resort until the arrival of more sophisticated breathing equipment. Meanwhile, vigorous attempts are made to restart the heart including blows to the chest wall, electric shocks to the cardiac area and injections of epinephrine directly into the heart. Once mechanical respiration is started family and friends gather to await the outcome.

Ironically, successful attempts to restore life can yield tragic results. In the midst of all the excitement it is often forgotten that the key to a worthwhile survival lies in restoring the heart-beat in a matter of minutes, within three or four minutes as a matter of fact. Beyond that time, should the patient be so unfortunate to be revived, he likely will display all the classic signs of decortication. He will no longer be able to recognize those nearest and dearest to him, no longer be able to speak or hear or to move his extremities. This “brain dead” though technically alive individual will become a burden to someone for years to come. Should the case come to autopsy, when the dura mater is opened to inspect the brain, the outer cells of the cerebral cortex pour out as a liquid, destroyed from the lack of oxygen.

As viewed by the layman the respirator is an impressive machine known to be capable of saving life in an emergency. Its vital role of restoring life in cases of drowning, drug overdose and paralysis of the chest muscles in poliomyelitis is well known. However, often the respirator is of little value in some cases of sudden death. Sending regular volumes of oxygen into the lungs of an individual apparently dead, an individual with no cardiac movement to bring the oxygen out to the vital organs—especially the brain—is hopeless.

Once the respirator is started there is a great reluctance to shut it off even when it seems to be doing little good. Sometimes there are legal, religious or other barriers against stopping the equipment. On the other hand there are limits to how long efforts to revive should go on. As the patient lies lifeless on the respirator with no signs of a return of vital signs, especially a heart-beat, what is to be done next? Who will give the order to stop the machine and abandon all efforts to restore life? In the case of a child it will have to be a parent or even both parents. In other cases it would have to be the spouse or an older sibling. Certainly it will not be the attending physician even though he was responsible for starting the attempt to restore life in the first place. Members of the hospital administration stay to one side in the role of observers.

This impasse brings up the critical function of the physician in charge. Thus, soon after efforts to revive are begun he should point out that certain factors govern the chances of a happy outcome. He must be sure the family clearly understands the dire effects of the loss of oxygen to a healthy brain as the result of prolonged cardiac arrest. To avoid later criticism and trouble from various quarters he should bring in consulting specialists to confirm the warnings already given to responsible family members. This information will be of great help in reconciling the grieving relatives that further efforts to bring back life are hopeless. Admittedly, even when the situation seems irreversible sometimes it is better to allow the respirator to run on for a while longer. This gives the family further time to reconcile themselves that the patient has really died despite all efforts to save him.

The following is an example of how badly things can turn out even under ideal circumstances.

An 11-year-old boy was brought to the hospital late at night accompanied by his mother and an aunt. When the physician on call walked down the hospital corridor to interview the women he passed the child's room and noted that the child did not seem sick at all. In fact he was sitting up in bed gesticulating to the Interne examining him.

There was a sudden shout from the room and the attending physician and the women ran down to the bedside. The Interne was astride the child giving him artificial respiration. Between gasps the Interne explained that while the boy was talking to him he suddenly fell back apparently dead. He had stopped breathing and had no radial pulse. Intermittently the Interne stopped to deliver blows to the chest wall to restart the heart. After the mechanical respirator was brought into play, it was allowed to run for the rest of the night with no sign of a return of spontaneous respiration or heart-beat.

By dawn there was still no evidence of revival and the mother sadly gave permission for a postmortem examination. When the dura mater was opened there was an outpouring of a thick creamy liquid representing the destroyed cells of the cerebral cortex. The child was harboring an abscess of the cerebellum.

In conclusion then, before ordering resuscitation physicians must be reasonably sure of a successful and worthwhile outcome. To guard against permanent brain damage this means they are confident that regular cardiac action can be restored by the fourth minute. Regrettably, this warning about the four-minute deadline was never addressed by any of the discussants in recent Letters to the Editor reviewing the topic of DNR (Do Not Resuscitate) orders on the hospital record.[1,2,3]

Lastly, to avoid later misunderstanding, all actions taken to restore life must be carefully recorded on the medical record.

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Encouraging patients to stop smoking—and discouraging them from starting—continues to be one of the most challenging yet frustrating aspects of medical practice. The following guest editorial was written to accompany the primary article on the same topic in this issue by Hallenbeck et al. Guest editorials reflect the opinions of the authors and do not necessarily reflect the opinions of the officers and trustees of the South Carolina Medical Association.

—CSB

SMOKING CESSATION AND PREVENTION

According to Dr. Louis W. Sullivan, U.S. Secretary of Health and Human Services, in 1989, smoking-related illnesses cost $23 billion for direct health care and $52 billion in associated costs.[1] It has been estimated that the costs of smoking in South Carolina were nearly $228 million in direct costs and $282 million in indirect costs in 1985.[2]

While several studies have attempted to quantify the economic benefits of smoking cessation, from a health perspective, the primary benefit would be an improvement in the quality and quantity of the lives of those who kick the habit. Life-styles and health risk behaviors generally are a matter of choice among adults. The choices made, however, must be based on accurate information from reliable sources. Those who have made unhealthy choices in the past need motivation to change and support and reinforcement in their efforts to do so.

Physicians are a logical source of health information and are in a unique position to positively influence the health behavior choices of patients. At least 70% of all smokers see a doctor at least once a year,[3] with an average of 4.3 visits per year.[4] Most smokers who quit do so on their own, rather than through participation in formal quit-smoking programs.[5] Thus, physicians have the potential to influence a considerable number of smoking patients to quit and to support and assist them in their efforts to do so.

A recent analysis of the cost-effectiveness of physicians giving a simple message about the health hazards of smoking and strong advice to quit smoking suggests that it is at least as cost-effective as several other medical practices, and more cost-effective than treating mild hypertension or high blood cholesterol.[6] The advice required no special training and took only four minutes during a routine office visit. This suggests that, with little extra effort, physicians could incorporate smoking cessation counseling into all visits involving patients who smoke.

The South Carolina Healthy People 2000 Coalition has adopted the national health promotion and disease prevention objective of reducing cigarette smoking to no more than 15% of adults by the year 2000. This represents a 48% decrease from the 1987 baseline over the next nine years. To achieve this ambitious goal, non-smoking messages must be repeated loudly and frequently through personal advice, printed materials, the media, and smoke-free environments.

As physicians, we must play a major role by informing all patients of the health consequences of smoking; discouraging those who do not smoke from starting; advising those who do to quit; and providing support and assistance to patients who decide to kick the habit. Our non-smoking messages will have added impact if all of us set an example by not smoking ourselves and by establishing smoke-free environments in our offices, clinics, and laboratories. Using the medical authority of more than two decades of scientifically-proven evidence of the health hazards of smoking, we can make a vital contribution toward improving the health of the citizens of South Carolina and achieving a nation of healthy people by the year 2000.

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On the Cover:

DECEMBER 7, 1941

On this 50th anniversary of the attack on Pearl Harbor, the words of President Franklin Delano Roosevelt remind us of a time of patriotism and national fervor in the United States which, though in the lifetime of many of us, seems generations removed. As in the case of other more recent national calamities, most of us remember vividly where we were when the news broke.

The following editorial from *The Journal* of May 1942 attempts to answer for the physicians of South Carolina the question that was on the minds of many.

Betty Newsom
The Waring Historical Library

WHAT SHALL I DO?

"What shall I do?" is the question which every patriotic physician is asking himself today as he hears the call of the army for more physicians.

Who are we that we should assume the role of a Delphian oracle and tell any man what he should do or should not do. All we dare is to suggest, and these are our suggestions:

For the physician who is under 36 years of age, whose services cannot be considered as essential to the medical welfare of his community or to the organization with which he is connected—go to the Medical Recruiting Board in Columbia and volunteer.

For the physician under 36, whose services are essential to the welfare of his community—volunteer your services through the Procurement and Assignment Service in Washington and then, if possible, arrange for some older man or some woman to take over your work.

For the physician between 36 and 45—volunteer your services through the Procurement and Assignment Service, but do not expect to be called unless you are a specialist or unless the need grows greater than it appears at the present time.

For the physician over 45—take off your coat, hang it in your own office, roll up your sleeves, and get ready to tackle the biggest practice you have ever had.

And finally, for all physicians—if it appears as though you will be called into service, do not make final plans to close your office or to turn over your work to another unless you are reasonably certain that you can pass the rigid physical examination which will be required of you.

Auxiliary Page

SCMAA LEGISLATION REPORT

The Legislation Committee has set six goals and objectives for the 1991-92 year. They are: (1) all members of SCMAA registered to vote; (2) one hundred percent auxiliary membership in SOCPAC; (3) update the list of the General Assembly of S.C. and make it available to county chairmen and county presidents; (4) increase local involvement and social contact at the grassroots level with elected officials, and encourage auxiliary members to get involved in local and state campaigns; (5) county chairmen to have a working knowledge of important medical issues; (6) maintain a positive working relationship with our SCMA lobbyists. These are lofty goals, but they can be attained through hard work and good communications.

The county chairmen were informed that they will be receiving the "Legislative Update." This publication will give them valuable information about healthcare issues and current bills before the Legislature affecting the practice of medicine. Chairmen are also encouraged to call the SCMA office and talk with Jan McKellar, Director of Health Policy Affairs, concerning the SCMAA position on medical issues.

This fall, auxiliary state chairmen, officers and members have been writing letters and making phone calls concerning the RBRVS Conversion Factor. A national AMA Auxiliary grassroots campaign has resulted in 100,000 comments submitted to the Health Care Financing Administration (HCFA). This issue, and others, will be closely monitored during the year.

Plans for a "Day at the Capitol" are on the drawing board. The Legislative Committee would like our county chairmen to come to Columbia in January and have a personal visit with at least two legislators from their county. This would be followed by lunch and a "mini-workshop" on the legislative process.

Legislative action has always been an important part of the SCMAA program. It is believed that auxiliary involvement in legislative action is vital to continued quality health care. We intend to work diligently on behalf of better medical legislation.

SHIRLEY MEIERE
Legislation Chairman

SUSAN BRILL
Co-Chairman

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